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MARKETING'S ROLE IN SCIENTIFIC MANAGEMENT

Edited by

Robert L. Clewett

American Marketing Association

MARKETING'S ROLE
IN
SCIENTIFIC MANAGEMENT

American Marketing Association. Proceedings... 1957.

MARKETING'S ROLE IN SCIENTIFIC MANAGEMENT

Edited by

ROBERT L. CLEWETT

School of Business Administration
University of Michigan

AMERICAN MARKETING ASSOCIATION
27 East Monroe Street
Chicago 3, Illinois

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PREFACE

This volume contains the papers which were presented to the 1957 Detroit National Conference of the American Marketing Association. Competent people from both the business and academic professions discuss a wide variety of significant topics relating to the Conference theme, "Marketing's Role in Scientific Management." Clearly, these papers represent an important contribution to marketing knowledge.

Over one hundred experts combined their thoughts and efforts in planning and presenting the Conference. In the introductory article of this book, Joseph C. Seibert, chairman of the National Conference Committee, discusses the thinking which preceded selection of the Conference theme. Once the theme was decided upon, appropriate general topics were chosen and people competent in these areas were invited to develop programs, select speakers and to act as chairmen of the individual sessions of the Conference. These men, with Joseph Seibert acting as chairman of the group, worked out the details of the 1957 Detroit Conference Program. An examination of this program, shown following the Table of Contents, suggests the magnitude of the task which faced them and the outstanding success which they achieved.

Publication of these papers in their present order, rather than as presented to the Conference, is intended to enhance their value to the readers of this volume. Part One, Marketing Management, includes those papers which are useful from the management point of view in identifying problems, showing relationships, setting objectives, planning programs, utilizing information presently available, and recognizing the need for additional information in the implementation of present or future courses of action. Part Two, Marketing Research, includes papers dealing with research of a rather broad nature and with marketing research methods, procedures, and techniques. Part Three, The Economic Horizon, contains papers which emphasize the future of the general economy and of particular industries. Additional detail with respect to classification of the material included is shown in the Table of Contents.

Because these articles were prepared primarily as speeches rather than for publication purposes, the Editor considered delaying publication of this volume to permit reworking of the manuscripts by the authors to the end that it would be made more useful

to business and academic people alike over a longer period of time. In view of the high degree of interest in the published papers which was expressed during and after the Conference, and in recognition of the vast amount of time and effort which would be required to communicate with such a large number of authors, it was decided to publish the available manuscripts in substantially the form in which they were submitted. All but four of the speakers provided copies of their talks for inclusion in this book. All papers included have been reproduced in their entirety; that is, none have been condensed or summarized.

The Editor has refrained as much as possible from making any changes in words, phrasing, and paragraphing. In a few instances, however, changes in phrasing were needed. These few changes were made by the Editor without consulting the authors since time limitations made it impractical to do so. Every care was exercised, however, to preserve the author's intent. The Editor assumes full responsibility for these modifications and for all details relating to physical reproduction of these papers.

The Editor is deeply indebted to the authors, many of whom, already heavily burdened with their regular duties, took time to prepare high-quality manuscripts and to make them available in time for early publication. Their cooperation has speeded publication of this volume. Appreciation is also expressed to the many people who have assisted in the multitude of details associated with a book of this kind. The Editor is especially indebted to Marguerite Kent, the Association's Executive Assistant, for attending to the many technical details involved in the printing of this volume. To all these people, I express my deepest appreciation, for they have made the Editor's task a pleasant one.

ROBERT L. CLEWETT

University of Michigan
Ann Arbor, July 1957

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PROGRAM FOR MARKETING'S ROLE IN SCIENTIFIC MANAGEMENT

The Thirty-Ninth National Conference of the
AMERICAN MARKETING ASSOCIATION
June 19, 20, 21, 1957
Hotel Statler Detroit, Michigan

WEDNESDAY LUNCHEON

Session 1. THE NEW RESPONSIBILITIES OF MARKETING MANAGEMENT

Chairman: Charles W. Smith, McKinsey and Company, President, American Marketing Association

Speaker: John G. McLean, The Continental Oil Company

WEDNESDAY AFTERNOON

Session 2A. PRODUCT DEVELOPMENT

Chairman: Gordon A. Hughes, The Scott Paper Company

"Product Development from the Management Point of View," Conrad Jones, Booz, Allen and Hamilton

"Design of the Marketing Program for a New Product," G. T. Borcherdt, E. I. DuPont de Nemours

Session 2B. HOW TO MAKE AN INDUSTRIAL SALES FORECAST

Chairman: N. R. Ladabouche, Steel Magazine

"Economic and Sales Forecasting in an Industrial Company," Loren K. Miller, Harris-Seybold Company

"Three Ways to Make an Industrial Sales Forecast," Robert O. Fernald, National Lead Company

Session 3A. CONSUMER MOTIVATION

Chairman: George H. Brown, Ford Division, Ford Motor Company

"Major Issues in Motivation Research," Wroe Alderson, Alderson & Sessions

"Consumer Motivation and Economic Analysis," Robert Ferber, University of Illinois

"The Place of Motivation Research in Marketing Research," Deryl Case, General Electric Company

Session 3B. FINDING NEW INDUSTRIAL PRODUCTS

Chairman: Dilworth H. Walker, Cresap, McCormick and Paget

"New Products by Proxy," Russell B. Robins, L. A. Young Spring and Wire Company

"Product Planning," Robert F. Dick, George Fry & Associates

THURSDAY BREAKFAST

Session 4. RECENT DEVELOPMENTS IN DISTRIBUTIVE TECHNIQUES

Chairman: Sidney R. Bernstein, Advertising Age

"The Dynamics of the Present," C. Virgil Martin, Carson Pirie Scott and Company

"The Shape of Things to Come," Edward B. Weiss, Doyle Dane Bernbach, Inc.

THURSDAY MORNING

Special Interest Workshops
(Thirteen Sessions which run concurrently)

Session 5A. ADVERTISING: THE CHANGING ROLE OF ADVERTISING

Chairman: Reginald L. Dellow, Grant Advertising, Inc.

"The Changing Role of Advertising Rating Services," A. C. Nielsen, Jr., A. C. Nielsen Company

"The Changing Requirements of the Advertiser," Donald E. Swanson, Accent International

"The Changing Demands on the Agency," Clarance Hatch, Jr., Campbell-Ewald Company

Session 5B. AGRICULTURE: THE 32 BILLION DOLLAR CHALLENGE: HORSE AND BUGGY CONCEPTS OF AGRICULTURE MAY BE ROBBING YOU OF SALES

Chairman: Victor Hawkins, Capper Publications, Inc.

"Agriculture—A Growth Industry," Charles W. Russell, Marsteller, Rickard, Gebhardt and Reed, Inc.

"Industry's Chief Resource and Partner," Ray A. Goldberg, Harvard University Graduate School of Business Administration

Discussants: Vernon W. Ruttan, Purdue University
Herman M. Southworth, United States Department of Agriculture

Session 5C. APPLIANCES: CHANGING PATTERNS OF PRODUCT DESIGN AND DISTRIBUTION

Chairman: David W. Day, General Electric Company

"The Customs and the Builders," Harvey E. Weimer, The Whirlpool-Seeger Corporation

"Changing Concepts of Home Building," Richard N. Jones, *House and Home*

Session 5D. AUTOMOTIVE: DEVELOPMENTS IN THE MARKET FOR AUTOMOBILES

Chairman: Edwin H. Sonnecken, Ford Division, Ford Motor Company

"Sales and Marketing Planning of the Edsel," Henry G. Baker, Edsel Division, Ford Motor Company

"Volume Planning in the Automobile Industry," John H. Sloan, Chrysler Corporation

Session 5E. CHEMICAL: THE PLACE AND FUNCTION OF MARKETING RESEARCH IN CHEMISTRY

Chairman: Shea Smith III, Monsanto Chemical Company

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"Centralized vs. De-Centralized Organization for Marketing Research in Chemical Firms," J. William Everson, The Dow Chemical Company

"Long Range Planning in the Chemical Industry," Robert L. Bateman, Union Carbide Chemicals Company

Session 5F. FIELD INTERVIEWING: THE FIELD MICE LOOK AT RESEARCH

Chairman: Helen M. White, Helen White Interviewing Service

"Field Problems from the Research Manager's Point of View," Bee Angell, Bee Angell and Associates, Inc.

"Trials and Tribulations of an Interviewer," Esther Lotz, Esther Lotz Market Research Services

Session 5G. FUELS: FORECASTING THE FUELS OF THE FUTURE

Chairman: John H. Picou, The Atlantic Refining Company

"United States Energy Requirements in 1965," N. B. Guyol, Standard Oil Company of California

"The Future of Synthetic Liquid and Gaseous Fuels," H. R. Batchelder, Battelle Memorial Institute

Session 5H. MARKETING INSTRUCTION: RESEARCH IN THE UNIVERSITIES

Chairman: Robert H. Cole, University of Illinois

"The Situational Approach to Selling," Franklin B. Evans, University of Chicago

"De-Fogging the Crystal Ball," E. J. McCarthy, University of Notre Dame

"A Simplified Solution for the Location of Marketing Outlets Using an Analogue Computer," Edward L. Brink, University of Pennsylvania

"Systems Developed by Department Stores to Balance Inventories," Richard M. Hill, University of Illinois

"Where Do We Stand on Trade Discounts?" Henry D. Ostberg, New York University

"Sales Potentials and Their Use in Test Marketing," Louis D. Volpp, State University of Iowa

Session 5I. METALS: HAS CAPACITY OUTGROWN MARKETS?

Chairman: William B. Gilmour, Inland Steel Company

"The Situation for Aluminum," S. M. Blumenreich, Reynolds Metals Company

"The Situation for Copper," Kemp G. Fuller, Marketing Consultant

"The Situation for Steel," James L. Rich, United States Steel Corporation

"The Situation for Titanium," Bernard J. Keffler, Republic Steel Corporation

Session 5J. PACKAGED GOODS: THE INTRODUCTION OF PACKAGED GOODS PRODUCTS

Chairman: Charles T. Woods, The R. T. French Company

"Introducing New Products: Some Observations," Stephen M. Barker, Perkins Division, General Foods Corporation

"The Grocer's Stake in New Product Introductions," Anthony G. Conn, ACF-Wrigley's Stores Inc.

Session 5K. PUBLIC UTILITIES: CONSUMER SURVEYS BY UTILITIES

Chairman: Paul F. Platt, Public Service Electric and Gas Company

"Use of Consumer Surveys in Directing Advertising and Sales Promotion Activities," J. Rudolph Guidroz, New Orleans Public Service Inc.

"Consumer Surveys to Determine System Operation and Load Growth," George L. Lahodny, The Detroit Edison Company

"Use of Consumer Surveys for Determining Public Opinion and Directing Institutional Advertising," C. Theodore Smith, American Telephone and Telegraph Company

Session 5L. RESEARCH AND CONSULTING: MANAGEMENT PROBLEMS WITH FIELD INTERVIEWING

Chairman: William F. O'Dell, Market Facts, Incorporated

"Adequate Insurance Coverage for the Field Interviewer," Ben Gaffin, Ben Gaffin and Associates

"Employee vs. Independent Contractor Interviewers," Alan C. Russell, Alan C. Russell Marketing Research

Session 5M. RETAILING: CONTROL AND DIRECTION OF SHOPPING CENTER ACTICITIES

Chairman: Paul E. Smith, College of Business and Public Service, Michigan State University

"The Financial Analysis of a Shopping Center," Larry Smith, Larry Smith and Company

"Shopping Center Management," Horace Carpenter, Northland Center, Inc., and Eastland Center, Inc.

THURSDAY LUNCHEON

Session 6. MANUFACTURER AND DEALER RESPONSIBILITIES IN AUTOMOBILE MARKETING

Chairman: D. Maynard Phelps, School of Business Administration, University of Michigan; President-Elect, American Marketing Association

Speaker: Walker A. Williams, Ford Motor Company

THURSDAY AFTERNOON

Session 7A. POPULATION ASPECTS OF FUTURE MARKETS

Chairman: Carl Rieser, *Fortune*

"A Marketing Profile of the Senior Citizen Group," David E. Wallin, J. Walter Thompson Company

"Economic Hazards in Population Growth," Earle L. Rauber, Federal Reserve Bank of Atlanta

Session 7B. APPLICATION OF SALES POTENTIALS FOR INDUSTRIAL PRODUCTS

Chairman: Harry Leopold, Jr., John A. Roebling's Sons Corporation

"Directing Industrial Salesmen in the Proper Use of Industrial Sales Potentials," S. V. Reiss, Graybar Electric Company

"Coordinating Activities of Industrial Salesmen with the Available Business," Charles Robert Brown, General Electric Company

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Session 8A. DYNAMIC FORCES IN POPULATION CHANGES

Chairman: Burleigh Gardner, Social Research, Inc.

"The Pattern of the Social Classes," Pierre Martineau, *Chicago Tribune*

"The Economy and Class Structure of the Negro and the Caste System in America," Arthur A. Hilgart, The Upjohn Company

Session 8B. COMPENSATION PLANS FOR INDUSTRIAL SALESMEN

Chairman: E. C. Frazier, Armstrong Cork Company

"Industrial Salesmen's Compensation: A Case History," James Dowd, Air Reduction Company, Inc.

"Common Characteristics of Compensation Plans for Industrial Salesmen," Charles J. Wilson, Cresap, McCormick and Paget

THURSDAY EVENING

Reception

INCOMING PRESIDENT'S RECEPTION

D. Maynard Phelps, President-Elect

FRIDAY MORNING

Session 9A. COMMUNICATIONS AND ADVERTISING RESEARCH

Chairman: William S. Robinson, Earle Ludgin and Company

"Researching the Creative Effectiveness of Advertising," Donald L. Kanter, Tatham-Laird, Inc.

"Creative Advertising Planning," Lester Delano, North Advertising Incorporated

"Qualitative Effectiveness of Television Advertising," Jaye S. Niefeld, McCann-Erickson, Inc.

Session 9B. ELECTRONIC DATA PROCESSING

Chairman: Robert L. Walsh, Chrysler Corporation

"Sales Control Data Prepared by Electronics," F. H. Muns, Westinghouse Electric Company

"Other Than Giants Can Benefit," Eli J. Goldberg, Rayco Manufacturing Co., Inc.

Session 10A. WHAT'S NEW IN RESEARCH TECHNIQUES

Chairman: R. D. Hardesty, Johnson & Johnson

"New Techniques in Marketing Research," Lester R. Frankel, Alfred Politz Research, Inc.

"Branded and Company Images Changed by Advertising," Charles E. Swanson, Curtis Publishing Company

"The Application of Statistical Quality Control to the Field Work of Audits and Surveys," Solomon Dutka, Audits and Surveys

"Psychological Response Patterns of Consumers," Arthur Koponen, J. Walter Thompson Company

Session 10B. PRICING FOR PROFIT

Chairman: Robert O. Fernald, Director of Market Research, National Lead Company

"Pricing in a Declining Market," Alfred Oxenfeldt, Columbia University

"How to Use Market Analysis in Price Determination," Edward Ide, Alderson & Sessions

FRIDAY LUNCHEON

Session 11. THE LONG-RANGE OUTLOOK

Chairman: Louis M. Randall, Jr., The J. L. Hudson Company; Chairman, 39th National Conference, American Marketing Association

Speaker: Murray Shields, MacKay-Shields Associates

Part One

Marketing Management

1

MARKETING'S ROLE IN SCIENTIFIC MANAGEMENT

JOSEPH C. SEIBERT*

Miami University

IN the annals of American Business a record is being written which clearly shows the transition in emphasis from production to distribution. The tremendous increase in productivity which we have experienced in this country during the past fifty years, and the rising level of living which has followed, has brought with it the need for greater attention to the market place. Marketing people are well aware of their changing role, the need to assume greater management responsibility, and the need to develop further their concepts, tools, and techniques of scientific management.

In the first decade of the present century there was ample evidence of concentration on expanding physical output. The scientific management of the day was associated with the work of F. W. Taylor in the area of "Industrial Management." The second decade of the century witnessed an accentuation of the same problems and a continuing concern to reach the same output objectives. The first world war added to the demand for goods which a production system was just beginning to satisfy. It was not until the twenties that any evidence appeared which could be taken as an indication that the productive mechanism had fulfilled its objective and perhaps even over-shot its mark. The occasion, furthermore, was that of a normal aftermath of the build-up in production capacities to meet the temporary needs of war. In any event, there was the beginning of a change of emphasis, on the part of management, from production to marketing. Advertising became of increasing importance, installment selling was more prominent, and

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**Joseph C. Seibert* is Professor of Marketing and Chairman of the Department of Marketing at Miami University, Oxford, Ohio and is Director of Oxford Research Associates, Inc., a marketing research firm. He has been Chairman of the American Marketing Association's National Conference Committee since 1955, acted as Chairman of the 1957 Detroit Conference Program Committee, and aided in planning the December 1955 New York Conference and the June 1956 Pittsburgh Conference. Professor Seibert is a past president of the Cincinnati Chapter and has been active in AMA affairs for many years. He holds a PhD degree from Northwestern University.

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marketing research began to grow. The role of scientific management in marketing had its roots in the twenties.

Reduced sales volumes in the thirties quickened marketing problems and shifted emphasis even more from the area of production to the area of distribution. Confidence was at a low ebb, however, and individual initiative suffered further from a wave of governmental regulation. Sales and production remained well below potentials until the forties, when the Second World War returned the focus of the nation's attention to production and production problems. During the forties and until the turn of the century, management again was interested in getting goods produced to satisfy war needs; and after that to satisfy pent-up consumer requirements which had been held in check during the period of hostilities.

In the present decade, however, the transition which first began in the twenties, has reasserted itself. There are more than a few areas where production and production capacities have expanded beyond the needs of present markets. New markets must therefore be created to keep present capacities occupied. Again, expenditures on advertising and promotion are on the increase. Installment credit has mounted to a new peak. There is more interest in marketing research than ever before. Those engaged in the profession of marketing have often heard that, "nothing happens until something is sold," that "goods are made by horsepower and sold by manpower," and that "marketing costs should be higher because our level of living is tied to our marketing efforts." Even the progress of industrial automation is destined to be delayed unless we can develop the mass markets to absorb this contemplated automated mass production. It may well be that the emphasis will have to be that of "creating customers for products" rather than "creating products for customers."

Modern management has recognized this situation and, as a consequence, has become increasingly aware of marketing's importance in the over-all operations of the business enterprise. During the past few years, many firms have assigned the responsibility for coordinating all marketing activities to one person—the marketing manager. More and more, marketing-oriented firms are establishing the office of vice-president in charge of marketing.

This coordination of marketing activities permits a better understanding of the interrelationship between all of the elements of a marketing program. At the same time, the perspective which it affords emphasizes the complexity of a modern marketing program and the need to fully utilize whatever knowledge is available in effectively and efficiently working toward predetermined objectives.

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A realization of these historical trends and current developments has penetrated the future planning of today's marketing leaders. Those who have guided the destiny of the American Marketing Association also have been well aware of the changes and the need to keep abreast of the marketing transition. The stated objective of the Association has long been the advancement of science in marketing.

With all this in mind the Chairman of the National Conference Committee, together with the Directors of the Association, and the members of the Detroit General Conference Committee, in planning the program for the 1957 Detroit National Conference, saw the opportunity to explore the role of marketing in the development of scientific management. Within this program framework there arose numerous occasions to illustrate the new concepts of scientific marketing management in the solution of specific problems facing marketing people. It likewise afforded an appropriate setting in which to promote a fuller appreciation of the challenge for marketing, and the consequent opportunities for those engaged in this profession. This is the background of the papers which are here presented under the title *Marketing's Role in Scientific Management.*

2

THE NEW RESPONSIBILITIES OF MARKETING MANAGEMENT

JOHN G. McLEAN*

Continental Oil Company

THE RESPONSIBILITIES

AS a means of approaching our subject, let us assume that we are sitting for a little while today behind the president's desk in your company or mine. Let us further assume that we have hired a new marketing vice president, or a new marketing manager at any level for that matter, and have the opportunity to chat with him for 20 or 30 minutes about the nature and scope of the responsibilities we wish him to assume. What shall we tell him?

Responsibility for the Selling Job

First of all, I believe that we should lay heavy stress upon his responsibility for doing the selling job—effectively, economically, and in a highly competitive manner. Given whatever products we may have and wherever we may have them, it is the marketing manager's job to find customers for them and to see that they are sold in such volume and at such prices that we may earn a respectable profit. This is the traditional role of the marketing side of the business—the day-to-day, bread and butter job—and it will always be at the core of the marketing manager's responsibilities.

To accomplish this end, our new marketing manager will have to do many things. He will have all the administrative and human responsibilities involved in recruiting, training, building, and supervising a sales organization. He will have the responsibility for such things as selecting sales territories, carrying out sales

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**John G. McLean* became Vice President of Coordinating and Planning for Continental Oil Company in February 1956. Previously, Mr. McLean had been Professor of Business Administration at the Harvard Business School. He had been engaged in teaching and research in the field of business economics and general management for about fifteen years. In addition to his academic work, he had been a consultant to the U. S. Navy and Air Force and various industrial organizations. Mr. McLean is co-author with Robert William Haigh of a recent book entitled *The Growth of Integrated Oil Companies*.

promotion and advertising campaigns, establishing price policies, developing suitable volume goals and expense budgets, determining adequate methods of compensation for sales personnel, and handling the difficult problems of customer relations which fall outside normal routines, or which are beyond the capacities of his subordinates.

In dealing with these responsibilities, our new marketing manager will be drawing heavily upon the skills of an artist, because his work will be much in the area of human relations and human motivations, where the intangible and illogical are often more important than the tangible and logical and where intuition is frequently a better guide than any amount of rational analysis. In discharging these responsibilities, he will also be managing many people who are largely of an artistic bent—sales promotion experts, advertising people, and, to a certain extent, the salesmen themselves.

Responsibility for Marketing Strategy

Next, I think we must tell our marketing manager that, in addition to this traditional responsibility for doing a selling job, we wish him to assume in a major degree certain other responsibilities which may be regarded today as "new," because of the new importance they are assuming and the new emphasis which is being placed upon them. Foremost among these is the responsibility of *marketing strategy*. In this term I include responsibility for the *tactics* of marketing in relation to a company's over-all program, and responsibility for the *logistics* of the entire distribution process.

The whole field of marketing strategy has assumed a rapidly growing significance in recent years for many reasons. Among other things, we might note the following:

The unusually high rate of business expenditures for new plant facilities in the postwar period, and the growing indications that the major economic problem of the near-term future may be that of stimulating consumer demand to the point where it can absorb the output of the new facilities on a continuous basis.

The steadily increasing scale of the capital investments required for manufacturing and distribution facilities, which, because of the high fixed costs associated therewith, place a high premium on the ability of marketing organizations to predict future sales volume with precision and to deliver results in accordance with forecasts.

The proliferation of new products springing from accelerated technological research, which has resulted in a high rate of product obsolesence and accentuated all the problems associated with product line planning, inventory management, and the introduction of new products to the market.

The growing trend toward product diversification as a means of gaining stability in over-all corporate income, which has tended to complicate the problems of marketing management at all levels of the organization from the bottom to the top.

The generally rising standard of living, which has tended to make consumers more discriminating in their wants and more exacting with respect to quality, price, and the range of products from which they wish to make selections.

And, finally, the growing scarcity and rising cost of money, which have given a new significance to profit planning and profit analysis, and have created an urgent need to see that each dollar of capital invested in the marketing department, and elsewhere, is earning at a satisfactory rate of return.

All of these circumstances are combining to bring about a fundamental change in the character of the marketing management job. A new and major emphasis is being placed upon the strategic, tactical, planning, and analytical aspects of the marketing manager's work. Today, perhaps more than ever before, he must conduct a relentless search for new logistical arrangements and new distribution techniques which will improve his cost position in the market relative to competitors. He must likewise ruthlessly comb his existing operations for "profit leaks" and for situations which are at the low end of the scale in terms of profitability.

In dealing with these matters, it will be necessary for our marketing manager to set some new standards for himself and his organization. We have long recognized that volume considerations must give way to profit considerations when appraising marketing department performance. Today some further transitions are necessary. Profits must be related to capital investments in the marketing area—not only in the headquarters offices, but likewise at nearly all operating levels in the marketing organization. Finally, the senior members of the marketing management team must be prepared to appraise and evaluate returns earned on invested capital in the marketing department in the light of those earned in other parts of the business.

In short, the circumstances of today are calling upon our marketing managers to function in an increasing degree as *scientists* in conceiving the business strategy of marketing operations, as well as *artists* in carrying out that strategy.

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Responsibility for Facing Business Facts

As a third responsbility of our new marketing manager, I would list one closely associated with that which I have just been discussing; namely, the responsibility for facing business facts in a hard-headed, realistic manner.

This involves several different things. First, it is necessary to establish the organization and procedures to collect the facts—clearly we cannot face them until we have them. Accordingly, the new marketing manager must employ effectively all the techniques of market research, control reporting, and associated information gathering activities. The information must then be digested and interpreted, and a constructive plan of action must be developed from the findings. Finally, it is up to the marketing manager to see that something is *actually done* about the results.

Now, these things are not easy for the ordinary selling organization to do. A few years ago, Dorothy Shay popularized a lively, and somewhat risque, hillbilly song which began, as I recall, something like this:

> "Folks are dumb where I come from
> They ain't had any learnin'
> Still they're happy as can be
> A' doin' what comes natur'lly."

Well, the point I wish to make is that this matter of facing business facts realistically does not "come naturally" to the ordinary salesman. In our company, we sometimes speak good-naturedly (and sometimes not so good-naturedly) about "salesmen's figures." And I am sure that many of you have similar expressions in your own organizations. By salesmen's figures, we mean data that have any, or all, of several characteristics. First, the figures may not add up or balance out and may be of dubious origin. The ordinary salesman is often quite inept at figure work. Next, the figures are frequently colored with considerable optimism, especially in the case of volume forecasts. Finally, the figures are often arranged and used primarily to prove a preconceived idea rather than to get at the facts of the matter.

Our marketing vice president, Mr. Harry J. Kennedy, who I am sure is well-known to many of you, explained the psychology of this matter to me one day with rare insight and perception. We had just been through a rather stormy review session in which one of our younger but most promising managers had steadfastly refused to face the realities of an unfavorable sales situation, about which our president had been asking some pointed and persistent

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questions. Three times, in one way or another, this manager was asked for figures that would have revealed his gasoline sales during the first six months of the year through one channel of distribution which were below the previous year. Each time, however, he responded enthusiastically with slightly different combinations of figures which neatly obscured the disagreeable fact and suggested favorable rather than unfavorable performance.

"A good salesman," Mr. Kennedy told me later, "is conditioned over a long period of years to ignore, or brush aside, facts or questions which would defeat him. In the normal course of his selling experience, he learns techniques to avoid being cornered by an adversary. Consider what happens when a young salesman starts out to make a round of calls on customers. He may get turned down cold on the first, second, and third stops—one after another. Buyer's questions may have focused on adverse facts, but if the salesman has let them get the upper hand and weigh upon him or depress him mentally, he will not only have lost these sales but also his bounce and enthusiasm in approaching prospect number four.

So, over the years, a good salesman automatically develops a "good forgetter" and learns not to let his mind be cluttered, or his work be influenced, by negative experiences. He learns to look at the world through some special "salesman's glasses" which shut out the negative and accentuate the positive. Later on, when he reaches higher management levels, and control reports containing negative information begin to come across his desk, he instinctively closes his mind to them and searches for, or has his subordinates prepare, some other kinds of figures that will be more satisfying to him.

It seems to me, therefore, that there is an important psychological transition which a good salesman must make as he moves up the organization ladder and assumes in increasing degree the broader responsibilities of marketing management. In short, he must become a cold, hard realist in the world of business facts.

Responsibility for Innovation

As a fourth responsibility of our new marketing manager, I would list the responsibility for introducing, and speeding the adoption of innovations in distribution methods. I lay stress upon this task not only because it is essential for competitive reasons, but also because a constant stream of innovations is necessary for the economic progress of the nation. Only by finding new and more efficient ways of doing things can we realize a steadily advancing standard of living for our population as a whole. The

responsibility for innovations is, therefore, important from both a business and social standpoint.

For the marketing manager to discharge adequately his responsibilities in this area, it seems to me that at least three things are necessary:

Receptivity to Changes. First of all, the marketing manager must develop within himself and his organization a receptive attitude with respect to new ideas and new developments.

If you will study the people in your office, family, church, or social group, I think you will find that they fall into two general categories. First, there are those who tend to regard any change in the accepted order of things as a threat to their personal security or happiness, and hence their first response to any change in plans or circumstances is usually negative. Second, there are those who regard changes as a fertile field for new opportunities, and hence their characteristic response is to view changes as desirable until proven otherwise.

Clearly, the new marketing manager and his associates must be primarily of the second type. Because if there is anything we can predict with certainty about the future of business affairs, it is simply that there will be plenty of changes in the present order of things.

Creative Imagination. Next, it seems to me that the new marketing manager must insist upon a very high order of creative imagination on the part of at least some of his subordinates—the power to dream up completely new ways of handling distribution processes.

As we review the history of the past quarter of a century, we can find ample evidence of enormous progress in the fields of science and engineering: radio, television (in color, even!), atomic energy, guided missiles that do their own stellar navigation, jet air transports that will permit us to take off in New York as the sun touches the horizon in the West and arrive in San Francisco before it completely disappears, airplanes that take off and land on their tails, and an earth satellite which is only a few months from launching. I close my eyes and quickly convince myself that these things can't be done! Then I open them again, and there they are—fantastic, incredible, but fast becoming commonplace realities.

As we look about us in the field of marketing management (or indeed, in the field of business administration generally), we can see a number of important new developments, but rarely do we find anything of the breath-taking, awe-inspiring significance of many of the recent changes in the field of the natural sciences.

And I put to you the question, why should this be so? It seems to me that we must charge our new marketing manager with the responsibility of finding ways and means of stimulating changes in the distribution field, parallel in importance and scope to those going on in technical areas.

Awareness of Obsolescence. Finally, if our new marketing manager is to discharge his responsibility for innovation, he must develop in himself and his organization the capacity to perceive obsolescence in business policies.

Some months ago, I ran across a statement in a speech by a former colleague of mine, Professor Malcolm P. McNair.[1] I read it casually at the time, but I have found it coming back to mind with increasing frequency, as I have sat in various business meetings. The statement was as follows:

> "The trail of business progress is littered with the debris of outworn management devices. One of the great truths of human experience is that management plans, systems, and concepts have a rate of obsolescense just as does a piece of machinery. . .Orginally serving fully appropriate purposes, they tend to become encrusted with habit and tradition to a point where they actually become deterrents to fresh thinking."

In keeping with this thought, I would place upon our new marketing manager a high order of responsibility for perceiving the points at which *business policies* in the marketing area undergo economic obsolescence and, in effect, degenerate into *business prejudices.*

Responsibility for Defense of our Economic System

Finally, I believe we must charge our new marketing manager with the responsibility for manning the front lines of defense in our efforts to maintain in this country the private enterprise system which has contributed so much to the high standard of living enjoyed by the American public. I am sure you are all keenly aware of the threat to our present economic order which lies in the steadily growing role the Federal Government is playing in

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1. Before the Controller's Congress and Merchandising Division Joint Session, National Retail Dry Goods Association, 46th Annual Convention, New York, New York, January 9, 1957.

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American business life. The experiences of almost every European nation demonstrate that the threat is not an idle one and that it is a very easy thing to drift down the road toward some form or another of socialism.

The political attacks upon business organizations and the growing tendency toward the exercise of various kinds of government intervention and control have their roots, of course, in deep-seated and long-standing misgivings on the part of the public with respect to the motives of business managers, and the human and social values of business enterprises, and particularly large-scale enterprises.

In meeting this problem, we must first of all make certain that our business practices and methods meet very high standards from a social, moral, and ethical standpoint. We must then resist with vigor and skill the attacks which spring from misguided, ill-informed, or politically inspired sources.

The marketing manager is necessarily in the forefront of this battle, because the marketing department is the one which normally has the closest association with the public. Moreover, our marketing manager is the one who has the responsibility for the matters which have most frequently been the focal points of political attack; namely, price and product policies and business relationships with dealers, jobbers, and the many other small business units involved in the distribution process.

If he is to be successful in discharging his responsibilities in this area, our new marketing manager must recognize that it is not sufficient merely to extoll the economic and materialistic contributions of our present business system. Good products, in large volumes, at low prices—this is an old story, and the public has long since come to regard these things as minimum standards of performance. The attack today is being made on social, moral, and ethical grounds—and these are the grounds on which it must be met!

Our marketing manager must also recognize the importance of taking a consistent position before the public. We cannot, on the one hand, sing the praises of free, unfettered business competition, and on the other hand, seek the pseudo-protection of the so-called fair trade laws, excessive restraints on foreign imports, and government support of agricultural prices at unrealistic levels. Nor can we clamor for reductions in taxes and Federal spending and at the same time plead for government building programs to stimulate trade in areas where we do business. These are inconsistencies which the public will not accept as a steady diet.

Finally, our marketing manager must realize that much of the pressure for government intervention and control comes, unwittingly, from within our own ranks! All too often when competitive pressures become a little more painful than usual, we (and here I mean businessmen generally) are inclined to run to Washington for some kind of Federal protection or control. Each group, of course, wants only a little bit of Federal help—at the points where it is experiencing competitive pressure or having other difficulties—and vigorously resists government intervention in other areas. But in the aggregate, this adds up to a tremendous clamor for Federal intervention and control—here, there, and everywhere in our economic life! We must recognize that true business competition sometimes achieves its ends by painful means, and we must learn to accept the bitter along with the sweet.

MEANS OF HANDLING THE JOB

If our new marketing manager has borne with us thus far, I suspect that at this juncture he would stop us with a question. "This is all well and good," he would say, "I understand and appreciate the significance of the points you have been discussing. Do you now have any suggestions as to how I should go about handling these 'global' responsibilities you have assigned to me?"

It seems to me that there are at least three suggestions we might make to him.

A Problem of Eugenics

The first problem to be faced is one of eugenics. We must do some crossbreeding in our marketing organizations. The handling of these responsibilities clearly calls for a diversity of human talents. We need men who have the personality traits and human characteristics which will enable them to do an effective job in dealing with customers and the public; we need artistic and imaginative people to create effective advertising and sales programs and to develop new ideas with regard to distribution methods; and we need men with strong analytical abilities to cope with the strategic and logistical aspects of our operations.

All of these capacities, of course, are not easily found in any one individual. I believe, therefore, that we must establish recruiting programs which will continually feed into our marketing organizations at least two different types of individuals: a group of "artists" whose primary forte will be dealing with the problems of personal selling, advertising, and sales promotion, and a group

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of "scientists" whose primary forte will be analysis, interpretation, and logistical planning. In time, these two streams will influence and educate each other, and out of the intermingling will come the new generation of marketing managers.

The task of bringing a sufficient number of analytically minded people into our sales organizations will not be accomplished easily, because we are all prone to do recruiting in our "own image." It is my good fortune to go on occasional recruiting trips with our marketing vice president, Mr. Kennedy, whom I mentioned earlier, and occasionally we occupy adjacent interviewing rooms.

In the course of my discussions, I sometimes find a boy who wins my heart immediately. He is well-poised and has a charming personality, and I am immediately filled with enthusiasm to have him in our organization—but I find he has little liking for difficult analytical problems. So I take him with me and knock on Mr. Kennedy's door and say, "Harry, here is a boy I'd like very much to have you meet. It looks like he might fit in our marketing organization."

Conversely, Mr. Kennedy sometimes finds a man with a good academic record and indications of excellent analytical ability—but some eccentricities or personal mannerisms that would make it difficult for him to do an effective job in meeting the public. So Harry will knock on my door and say, "John, here is a boy who looks like a natural for your staff group."

Once in awhile the thought occurs to both of us that in our efforts to be helpful to each other, we may perhaps be doing ourselves a considerable disservice. I need some of those boys with outstanding sales personalities, because a staff group is useless unless it can "sell" its services and product to management. And Harry, in his turn, needs some of those smart analysts diffused throughout his organization, if over the years it is to discharge in full measure the responsibilities of marketing management.

Let me hasten to add that in recognition of these facts, we have for some time been experimenting with a program to interchange people among the two departments on rotational assignments.

Organization Arrangements

Beyond well-balanced recruiting the next step in handling these new responsibilities of marketing management is organizing to do the job. Suitable staff units must, of course, be set up to handle such things as market research, sales analysis, product planning, price analysis, supply and distribution arrangements, and similar

matters. To my mind, it matters little whether all these analytical, planning, and service groups are actually part of the marketing department or attached to other groups, providing they are competently manned and available to the marketing department when needed. In addition, the senior officers of the marketing department must, of course, be placed on appropriate general committees where they will have an opportunity to participate in the formulation of plans and programs for the company as a whole.

As illustrative of the organizational steps which may be taken along these lines, let me mention briefly some of the moves which Continental has made during the past ten years. In 1948, the attention of our Marketing Department was focused primarily upon the selling jobs. Our headquarters group included managers of sales operations, sales administration, sales engineering, and advertising. Since 1948, three new staff units have been established—a marketing research group, a marketing expansion group, and a profit analysis group—all of which are concerned primarily with the strategic aspects of the marketing job.

Our Advertising Committee has been replaced with a Sales Programming Committee, which includes among its members the managers of advertising, sales promotion, sales training, marketing expansion, marketing research, sales engineering, and retail sales operations. This change was made as one means of placing increased emphasis upon the over-all program of selling effort, rather than upon individual phases, such as advertising alone.

Ten years ago, our division sales managers were given little statistical and accounting information about their operations, other than sales volumes. Today they are given complete profit information and are held responsible, not only for volumes and profits, but likewise (at least in part), for the return earned on the company's capital investments in their respective geographic areas. In addition, they are called upon to prepare expense budgets and are held accountable for variations between actual and forecasted results.

Our marketing vice president today sits as a member of our Management Executive Committee, along with our four senior vice presidents and the vice presidents in charge of the other functional departments. As a member of this committee, he is called upon to participate in the formulation of broad programs and policies for the entire company and has a full opportunity to see that Marketing Department programs are well-integrated with those of other groups.

These and various other organization changes have been made as a means of aiding our Marketing Department in handling the steadily broadening responsibilities which have been placed upon it by our top management group.

Procedures and Methods

Well-balanced recruitment plus the establishment of suitable organization arrangements, however, are not sufficient to insure effective handling of the new responsibilities of marketing management. In addition, procedures must be set up, formal or informal, which will enable each part of the organization to play its proper role in the management function. This is a point which is frequently overlooked. All too often we establish a market research unit, or some similar staff group, and then assume that the job is done and that the function will be handled automatically. Actually, continual effort is necessary to make sure that such units participate effectively in the day-to-day stream of management affairs.

Let me give you an example of what I mean from our own experience. A short time ago, we had a proposal for a new service station in City X, which showed an unusually good payout and return on investment. This project was passed up the organization ladder with considerable enthusiasm and quickly secured the necessary executive approvals. Eventually, however, it came to the desk of our controller, who is above all else, a realist. Familiar with average volumes, investments, and margins of profit in City X, he immediately knew that the indicated result was highly improbable, if not impossible. A recheck soon revealed that the field unit proposing the project had made a mistake in logic in estimating the profit margin, and that the deal was actually highly unattractive from a profit standpoint.

This error could easily have been caught at an early stage had the papers been routed, formally or informally, to the desk of the Marketing Department's Director of Profit Analysis. In fact, it later developed that he had expressed considerable skepticism regarding the indicated results when he had heard about the project in a casual coffee break conversation, without ever seeing the actual calculations.

In this particular situation, therefore, we had the right people and the right organization, but lacked the procedure or routines to bring the appropriate analytical experience to the problem at the appropriate time.

SUMMARY

As I approach the close of this paper, I am sure that some of you will be thinking that there is nothing "new" in the things which I have been discussing. We have known all along that these responsibilities were part of the job of marketing management. And in a sense you are right. But these responsibilities are *new* today in terms of the new emphasis that is being placed upon them, the new organizations and procedures that are being set up in company after company to assure that they will be handled effectively, the new courses of instruction that are being established in colleges and universities to provide training in these matters, and the new importance they are assuming in the strategy of business competition.

The task of reorienting selling organizations to these new directions will not be easy. Philosophers, historians, and theologians tell us that our greatest strengths often prove to be the source of our most serious weaknesses. This holds true for entire civilizations, small social groups, and individual personalities. Consider, for example, the company executive who has outstanding ability and great capacity for personal leadership. So talented, in fact, that he has no need to develop strong subordinates around him—or if he develops them, he fails to use them effectively. Here indeed, great strength carries the seeds of serious weakness.

So, too, it will be in the case of many selling organizations. The greater their capacity to do an aggressive, hard-hitting personal selling job, the less likely they will be to appreciate the importance of and to assume the responsibilities for the strategic aspects of marketing and the other new responsibilities I have been discussing. The task of overcoming this natural tendency and of developing strength with respect to both the old and the new responsibilities is the essence of the job that lies ahead.

In summary, I give you then the new marketing manager—artist, scientist, realist, innovator, and our first line of defense in maintaining our present economic order. My hat is off to the people who represent the profession of marketing management for the great strides that are being made today toward the effective handling of these multiple management responsibilities—and my enthusiasm is unbounded for the even greater strides that they will surely make tomorrow, either of their own accord, or under the relentless pressure of business competition. Changing economic conditions are calling for a new order of things in the field of marketing management—and the call is one which cannot be denied!

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MANUFACTURER AND DEALER RESPONSIBILITIES IN AUTOMOBILE MARKETING

WALKER A. WILLIAMS*

Ford Motor Company

UNTIL recent years business and industry were severely handicapped by the lack of precise tools for solving distribution and marketing problems. Now, however, it appears that marketing men are making signal progress in fashioning the tools that we have so sorely needed. They are developing a body of scientific method that can be applied to distribution and marketing problems. Already they have shown us how to reduce the risk in designing and pricing products for mass markets, and they hold before us promise of greater accuracy in predetermining product acceptability and measuring advertising effectiveness.

I want to assure the marketing profession that many management groups are watching their work with great interest, as they seek to refine and perfect their techniques in this very young science. We in the automobile industry have a special interest in their efforts because we have reached the point where our greatest problem is distribution—the sale of what we can so easily produce.

Our industry has now left the era when producing enough to meet demand was a real problem. A shortage of materials stopped production of automobiles during the war; and for several years thereafter we worked frantically to build new production capacity and turn out enough cars and trucks to satisfy the pent-up demand. During that period selling was no problem. We could sell all that our industry could produce.

But now those days are gone and we are in a buyer's market. From all indications, that buyer's market will continue into the future as far as we can see, barring some national emergency. Our industry will be able to supply all the cars and trucks our

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**Walker A. Williams,* Vice President of Ford Motor Company and Vice Chairman of the company's Dealer Policy Board, began his career with Ford in 1925. He has had experience in the sales department, and as Assistant Manager and Manager of several Ford branches. After 21 years of field experience he was appointed Ford Sales Manager in 1946, and upon formation of the Ford Division in 1949, he became its General Sales Manager. He was promoted to the position of Vice President of Sales and Advertising in 1950 and was elected to his present position in 1956.

customers want to buy in the immediate future. We expect industry new car sales this year to equal, or to exceed slightly, the 5.8-million sold in 1956. Happily, we at Ford are doing better than the industry as a whole has done so far this year, and have increased our sales over last year's levels by about 14 per cent. Even so, we could produce more if customer demand warranted.

Markets for automotive products are destined to expand considerably during the next decade—perhaps to a point where an eight-million-car-year will be a plateau instead of a peak. But I don't expect that it will be any real problem for production capacity to keep pace with that expansion. The truth is that the science of production has progressed at a faster rate than the science of marketing. So the catching up problem lies in marketing—an area where your talents and ingenuity can come into play.

In company with other industries facing expanding markets, the automobile industry must, of course, make heavy expenditures to improve and expand plants and facilities. For example, I am sure automotive investments of this nature are of the same order of magnitude as those of the steel industry. When projects already approved are completed, the automobile industry will have spent, during the past decade, more than $8 billion for new plant and equipment.

This expenditure provides the plants and physical facilities for production, but it does not cover tooling. That is the facet of our industry that has to do with styling—with the production of the distinctive appearance our customers demand. And toward this facet customers can be as fickle as women buying hats. They can change their minds about the styles they like for logical reasons, for illogical reasons, and for no reasons at all, but there is no appealing their decisions.

While the steel industry's customers don't care a tinker's damn about what a slab of steel looks like, automobile customers feel strongly about their likes and dislikes in automotive styling. So each year the industry spends hundreds of millions—one-and-a-quarter-billion by Ford Motor Company alone in the past ten years—to buy the tooling for the styling job customers demand.

With stakes as high as they are, the competition is tough and relentless. There is competition with other industries in the economy for a larger share of the consumer's dollar, competition between companies in the industry for sales leadership, and competition among divisions within companies to bring in more business and bring down costs. When you are producing and selling more than a million and a half vehicles a year, every

penny in cost reduction is important. In fact, five cents saved per unit in the Ford Division alone represents $75 thousand added profit each year.

By the same token, automobile companies will spend millions to produce a more competitive product. I don't know of any other industry where companies make such tremendous outlays for automated machinery in an effort to turn out a slightly better product. If it will save money or improve the product, we don't hesitate to tear out whole lines of machinery and replace them with the latest and most modern equipment.

In addition, of course, the automobile industry is a long-range business. We must commit hundreds of millions of dollars to production facilities, tooling and materials long before the first model rolls off the production line. Certainly no industry in our economy is more dynamic or competes harder than the automobile industry.

In the final analysis, however, all of this competitive struggle which we go through at the factories is merely a prelude to the battles of the market place. For all of our efforts are directed and channeled to one event—the sale of a car to a customer. So far as our corporate attitude is concerned, the customer is king, the most important person in the world, an individual to be pampered and catered to. For he controls our very corporate existence.

Our point of contact with the customer is the authorized dealer, an independent businessman who has made a heavy investment in equipment and facilities so that he can sell and service the products we manufacture. With the huge stake we have riding on the sales efforts of dealers, it follows that we have an intense interest in dealer operations. Even though the dealer is an independent businessman, and even though the factory and the dealership operate in separate spheres, there is a necessity for the closest kind of cooperation between us. For if either of us falls down on his part of the job, both suffer. Over the years the manufacturer has continuously increased the scope of aids provided to dealers in an effort to help the dealer do a better job of selling and servicing products.

At Ford, our interest in the distribution of our products is expressed from the very outset in the care we take in selecting the man to sell and service our product. The man we want for a dealer in the automobile business is the same kind of man many other businesses seek to handle their products.

He must be, first of all, a man of character—one who is recognized as being honest and fair in his dealings. This is a matter of

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great concern to us because the dealer is our point of contact with the customer; and although he is an independent businessman, his ethical standards in dealing with the public reflect upon us. The impression the customer gets at a dealership spills over on the manufacturer behind that dealership. Since we admittedly are courting the customer's favor, we want that impression to be good. We know it will be good if the customer's interests are protected by high and ethical standards of operation in the dealership.

In the second place, our choice for a dealer is a good businessman with a sound understanding of the basic principles of good management, with the skill to select, train, develop and organize the necessary manpower to carry on the activities of the dealership efficiently and profitably.

Third, his facilities, including land, buildings, tools and shop equipment, must provide the essentials for a well-balanced operation.

Fourth, his sales and service staff must be geared to the volume obtainable at a reasonable profit.

Fifth, his working capital must be adequate.

Sixth, he and his organization must be sold on the company, its products, its policies and methods.

And finally, and most importantly, he must actively participate in the management direction of his business. He must keep all operations efficient, have sound business ethics, and be eager to serve the customers in his market.

When we have found the man with all these qualifications and established him as a dealer at a good location, our job has only begun. Thereafter we must help him do a good job of serving the customers who buy our products. Our first responsibility is to maintain facilities to produce a competitive product in sufficient quantity to meet demand. To keep our cars competitive requires major changes not only in appearance, but in quality of workmanship, in performance, comfort, and safety, and the continuing addition of new features and accessories. The cost of styling, engineering and tooling new models each year runs high into the millions—but the cost of not doing it is even higher.

Given an outstanding product at the right price, the next job is to promote or pre-sell our products on a national basis so as to create a demand for them even before they reach the dealer showroom. But promoting and pre-selling can go only so far. Manufacturing and promotion are done on a mass basis, but cars are sold one at a time, by the individual dealer to the individual customer. So it is essential that the manufacturer work with the dealer to help him do an effective job of merchandising, and this

assistance must be given on an organized basis through an organization set up specifically to assist dealers.

At Ford Motor Company, the key to success in this dealer assistance program lies with the regional and district sales organizations. Regional and district sales managers must be men of wide experience, sound judgment and unquestioned ability. They must be men who can merit the confidence of the dealer. For it is their job to help the dealer provide top customer service and operate his dealership on a profitable basis.

Profitability of dealerships is a vital concern to us, for we know from long experience that a dealership which fails to show a profit won't be in business very long. We know that all of our best dealers are profitable dealers.

Aside from the mechanics of sales, service and profitability, there is another important facet of the dealer-factory relationship to which we are giving increasing attention. That facet is the somewhat abstract and nebulous part of our relationship which has to do with the general atmosphere in which we work.

We recognize that in the business of selling automobiles and trucks the climate in which the dealer operates—his relationships with the manufacturer, his attitude, his spirit, his personal satisfaction with the job he is doing—is just as important as advertising messages, sales and promotion campaigns, and all the other immediately related factors that make for a profitable business. The relationship between dealer and manufacturer must be positive and affirmative. It demands a willingness on the part of both parties to cooperate freely in working toward a mutually beneficial goal. We and our dealers have enough of a job battling our competitors without being distracted by internal skirmishes.

Over the past few years we have taken a number of steps to improve the over-all climate of the dealer-factory relationship. One of the earlier steps came in 1945, when the Ford Dealer Council was established. That was followed by establishing councils representing our other product lines. These dealer-elected councils provide an effective and continuing channel of communications between our dealer body and the company's top management.

Through our dealer councils the views and recommendations of all our dealers are reflected, first at district, then at regional, and finally at national meetings with members of our top management. There is no limitation on the subjects that come under discussion at dealer council meetings. They embrace every conceivable area—dealer-company relations, engineering and design, quality, the competitive situation, selling methods, advertising programs, and so on. The problems of a national nature

that can't be handled at the lower levels are brought to the attention of division personnel at the national meetings and are discussed at length. The council members also meet with the president of the company, the chairman of the board, and other top management representatives.

Written records of national meetings are given to members of the council, who in turn make their reports to the dealer body through regional, district and zone meetings. In this way, every dealer in the company organization participates in suggestions and is advised of discussions held at the national meetings.

I do not know of any instance in which the company did not deal conscientiously and sympathetically with all suggestions advanced by the councils. A great majority of the recommendations made are adopted, and when one is not, a full explanation of the reasons and considerations involved is given to all dealers.

Our dealer council system works well, and we plan to continue it and to work constantly to improve it. Some time ago, however, we began to feel that we needed to supplement the work of the dealer councils. We needed to make sure that we didn't lose contact with the problems of the individual dealer in the operation of the highly complex distribution system required to serve a national market. In such a system there is a great temptation to think in terms of dealers as a group, or of average dealers.

In reality there isn't any such thing as an average dealer, and a dealer organization isn't just a mass entity. A dealer organization is the big city dealer with his impressive show rooms, and the country dealer who works out of modest surroundings; it is the dealer who sells 3,000 cars a year with ease and the fellow who has to struggle to sell 50; it is the long-established dealer with his fortune made, and the new guy in hock up to his ears; it is the white-coated specialist who services limousines on Park Avenue, and the grease-covered jack-of-all-trades who relines the brakes on a farmer's truck in a country town. Each of these men is an important individual among the thousands of dealers who make an automobile distribution system work. Each has his own separate personality and ideas, his own separate problems.

We felt the need of a line of direct communication between these individual dealers and the company, a system through which individual dealer problems could be handled on a man-to-man basis. That need led our management to establish our Dealer Policy Board, a carefully selected group of men with long automotive experience who are charged with the specific responsibility of insuring that the individual dealer doesn't get lost in the shuffle. I have the honor to serve as vice chairman of that board,

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and it is the most interesting and challenging job I have ever had. During the past year we on the board have travelled throughout the country to meet with dealers and learn their ideas and suggestions. We have handled individual problems on a man-to-man basis, and have worked actively to improve the position of all of our dealers.

More recently we have offered our dealers a new sales agreement which we believe will form the basis for an even closer working relationship between us. It was drawn up after long and painstaking effort to make it the most workable and most effective instrument of its kind in the industry. It was reviewed and discussed thoroughly with the dealer councils before presentation to the dealer body as a whole.

One of the unusual features of the agreement is a preamble which sets forth in detail, and in layman's language, the duties, obligations and responsibilities of both parties to the agreement. The preamble describes the nature of the relationship between the dealer and the manufacturer, and emphasizes the interdependence of each upon the other. We believe that by describing our relationship and by spelling out our duties and responsibilities, there will be less opportunity for friction to arise from misunderstandings and disagreements in the future.

Just a short twelve months ago it was no secret that dealer-factory relations in our industry were at a low ebb. But since that time the situation has improved considerably throughout the industry. Right now there appears to be an era of good feeling and a disposition toward reasonableness and more and more dealer-factory cooperation all through the industry. I don't mean by that that there has been any reduction in competition among manufacturers or among competing dealers. Each of us is battling hard for every customer he can get. But the atmosphere has been cleared of tensions.

Earlier this year the Ford Division used research techniques developed by marketing men to check its impression that dealer-factory relations were on the mend. A representative sample of 400 Ford dealers and 200 dealers for a competing make were interviewed on matters that several months earlier had caused some friction. The answers the researchers got indicated that a large majority of our dealers are well satisfied with the way those matters are being handled now.

This attention to the relationship between the dealer and the manufacturer is a part of the greater emphasis we at Ford have been giving to the whole field of marketing. We realize that the time has come when we must give as much thought to getting more value out of distribution expenditures as we give to getting greater output from our production activities. We believe one of our great

opportunities for the future lies in getting more and more efficiency in marketing. We know we can't get that efficiency if we and our dealers work at cross-purposes.

Another change in the dealer-factory relationship is currently evolving from our extensive program of market research. Since all of our efforts are channeled toward the sale of a car to a customer, the market for our products is the controlling factor in everything we do. So it is just plain common sense that we should study market trends to learn what our customers want from us. In these studies we have found the techniques marketing people have developed to be most valuable, and the results of market research are being used more and more in making management decisions.

In fact, our decision to build the new Edsel line of cars was a product of market research. A study of automobile markets, that began in 1948, convinced us we had to have a second entry in the medium-price field if we were to continue to grow. Our studies showed that as family incomes rise, more and more customers were trading up into the medium-price field. They showed, further, that most customers tend, when switching from one make to another, to stay with the same corporate family of automobiles. However, the degree of buyer loyalty to a company's products is strongly influenced by the choice of makes that company can offer the graduating customer. Our market research pinpointed this buyer loyalty behavior.

In the medium-price field Ford Motor Company has a fine car—the Mercury. But our competition has had a broader coverage in this market by offering three makes to our one, giving graduating customers a much wider choice. There is no room for such weakness in a market of such vitality as that which we foresee in the next decade. If we are to continue to compete effectively in this dynamic business, we need an additional complete car line in the medium-price field. We are building that line in the Edsel.

I believe the fact that we are launching the Edsel, at a total cost of $250-million, indicates that we are fully sold on the value of market research as a tool for our industry. We are pleased with the progress the marketing profession has made in developing this new science, and I am certain that as marketing studies go on and its practitioners refine their techniques and achieve greater accuracy, their work and methods will find wider and wider acceptance in industry. Marketing men have an opportunity to render a much needed service to the whole business community.

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PRODUCT PLANNING

ROBERT F. DICK*

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FUNDAMENTALS OF PRODUCT PLANNING

SUCCESSFUL product planning and its offspring, product lining, require a favorable internal company climate to produce maximum results. There are eight fundamentals to be nurtured by management if product planning is to become a reality rather than a conversation piece.

The first requirement is accountability. Accountability for product lines that sell and produce satisfactory financial results. The sales department should take the lead in developing top products, not just in the lab or in the pilot plant, but in the market place, and against all comers, both large and small.

Our second fundamental requires the development of product line objectives and the means for effecting them. This kind of planning is based on facts, seasoned judgment, and interpretative imagination. What will be the nature and scope of our product lines five to ten years from now? What performance standards or criteria should we establish to measure results? Which of our present products should be deleted, which ones should be modified or refurbished, and what items should be added? How will we sell them—through what distribution channels—how shall we price, promote, and service them? These constitute basic objectives

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where the marketing man's thinking must come into action. We all agree that new product children are the lifeblood of a business. But how to achieve it. Will we (a) acquire outside companies; (b) acquire outside product lines; (c) develop and/or improve our own products through internal research; (d) produce carbon copies of competitive products; or (e) use one or more of these methods?

The tools for carrying out your product line objectives encompass technical research, engineering, production facilities, marketing research, manpower, and financial wherewithal. How well these tools are used will determine the extent of your profit margins, fixed and working capital requirements, and return on investment.

The third fundamental involves getting properly organized. A major requirement here is for competent people (you know if it weren't for people, business would be easy). Product planning, in addition to competent personnel, requires a clean organization structure, open channels of communication, intelligent advance thinking, realistic budgeting, sharp plan execution, and control, so that the planning effort can be measured and evaluated. Product planning is not just a technique—it's a way of corporate life.

In my thinking on product planning, I stress the following: (a) timing—or when to launch a product; (b) continuity—which means planning on a continuous rather than a "fits and starts" basis; and (c) open-mindedness—this is a willingness to hear out a new product idea. I encourage "brainstorming," crazy thinking, or any technique that will put man's imagination to work—collectively or individually.

The fourth fundamental involves co-ordination with other functions of the business. In product planning, marketing management has to co-ordinate its thinking with research, engineering, manufacturing, and accounting and finance. It spells out the specifications such as product type, material, size, shape, color, etc., all of which are translated by engineering and production into salable products. Through its people, sales must work closely with all facets of the organization.

A marketing concept embraces the entire activity of a company from the market side—being right with the market—getting customer thinking into product design—developing product policies and objectives. This ties back to engineering, manufacturing, and financial personnel. Are you going to tie up dollars on project A, B, or C? Could you more profitably invest in some other phase of the operation? Here is where marketing should permeate all areas of a company. It's literally the whole business as seen

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from the customer's point of view. This is what I mean by coordination as a fundamental.

The fifth requirement involves getting the facts. Fact finding is undertaken to preclude the danger of decision-making by hunch. The raw materials of product planning are facts on markets, customers, demand, competition—all subject to measurement. Planning results grow out of research, analysis, and interpretation, each of which is essential. Product planning based on facts minimizes costly mistakes. We think before we act—we act on fact rather than on hunch—as a result, we know where, when, and how much money it is going to take to do a job. For example, we have been counseling a company in the automatic washer field that has put up $1,500,000 and told its product planners, "Here, spend this and in two years we want to market a product with an entirely new washing principle."

In connection with a product planning assignment for a Canadian tool company, my staff recently completed an extensive customer survey. I wanted the facts as a guide to our thinking before recommending specific plans. We investigated product quality and performance, sales coverage, advertising and promotion, delivery, pricing, and many comparable areas. We had to summarize, synthesize, and digest a basketful of data. The facts told us that we had many holes to plug. They came from internal research, published sources, cost accounting, and from our own past experience. Their sophisticated handling will produce results with enough statistical intelligence to lead us to more meaningful interpretation and thus arrive at sounder-based decisions.

The sixth requirement is flexibility. At any time, we should be willing to change our thinking in the light of new evidence. I'll venture your companies, at a given moment, have revised engineering specifications, cancelled out a proposed product idea, revised a promotion plan, or killed an advertising program. This is being flexible.

An attitude of flexibility requires the following: (a) an open-minded top management that is willing to explore new product ideas, provide funds, write off failures, and continue to gamble; (b) a top management that, through co-operation and interest, integrates itself into the product planning effort; and finally, (c) a top management that is constructively dissatisfied with product research results.

The seventh fundamental of product planning is its continuous nature. It's a tough month-in and month-out job. It's dynamic, not static. Some plans sputter out because of poor follow-through. Others are well prepared, but lie dormant in some executive's desk.

Based on my experience, product planning is usually on a continuing basis, when these conditions prevail: (a) Mutual confidence and respect exists between the planners and the doers. (b) Decision makers are men of courage and vision. (c) An atmosphere of open-mindedness exists. (d) Executives are held to their commitments. (e) Product mistakes are written off, problems faced up to, and new ideas are constantly being put into the works.

Our final fundamental is what I refer to as scorekeeping. This is when we all stand up and are counted; a time when results are added and compared against predictions. These are really forms of control—a guide to the evaluation and improvement of product performance. Scorekeeping, therefore, is based on standards, such as sales and market estimates, product costs, profit margins, sales budgets, net profit after taxes, and return on investment.

Product planning is one of many essential instruments in the marketing process. It's not a soloist or a "one-man band," but a valued member of the symphonic team. Through teamwork, it blends harmoniously into each step of the marketing process, starting with marketing research through general management objectives and plans; product and market planning; programming; down through integration and field sales action to the point of customer use and consumption.

In order to write the music and fill in the words on product planning, we are going to discuss it under the headings of Policy Areas, and Organization and Product Lining.

POLICY AREAS

Responsibility for Product Planning

Under policy areas, our first task is to assign responsibility for product planning so that we will know who is to carry the ball. Today the general sales manager who proclaims, "Give us the product and we'll sell it," is operating by a book that's out of print. Under a managerial approach to product planning, he and his team should determine the make-up, complexion, and character of the line, and its breadth and depth. By objectively substituting fact-finding for fiction (through the use of the marketing research tool), the sales department ascertains and interprets customer needs and translates these requirements for research and engineering development, design, and production. As a result, commercially acceptable and profitable products finally emerge in the

market place. The product manager is the architect of the product line. Through planning, teamwork, co-ordination, and action, ideas are turned into dollars for the ultimate benefit of the stockholders.

This involves risk-taking of a high order. The sales manager, product manager, and related associates, both above and below their respective organization echelons, are gambling expense and investment dollars in research, tooling, equipment, production processes, and plant facilities, as well as in sales and marketing programs and the use of various order-getting ingredients up to the moment of customer receipt (and payment) for goods and services.

From a policy standpoint, your thinking on organization for product planning requires several major ingredients. First, competent personnel with imagination, creative ability, analytical experience, and enough freedom to take off their shoes and do a little crazy thinking. Product managers at Minneapolis Honeywell, Minnesota Mining, International Minerals & Chemicals, and many other companies go in for brainstorming sessions to get product improvement ideas.

The next organization ingredient is setting up the personnel at levels sufficiently high to provide freedom of thought, status, and co-operation from the doers.

It is necessary to have access to essential factual data without "miffing" the feelings of the sales operators. This is the age-old problem of co-operation and co-ordination between line and staff.

Finally, in getting organized for product planning, we must provide the necessary means for converting facts to action. Too frequently after gathering hot facts, they are allowed to grow cold, old, and useless in some bottom drawer while corporate arteriosclerosis sets in.

I like to think of the product manager as a merchant who is the major channel of communication between the customer on the one hand, and engineering, development, manufacturing, and marketing on the other. As a manager, he's a decision maker, a co-ordinator, and a team player who participates in every activity concerning the product or product group entrusted to him, from the original idea clear through to a customer sale, since, after all, it's the profitable sale that makes the cash register sing. Product managers are like general managers of small businesses. They plan, prepare, co-ordinate, and sell, in order to maximize net profit results and return on investment.

Objectives and Policies

Our second policy area deals with the development of objectives and policies to guide product planning thinking. In order to minimize wasted effort, we need a flexible pattern for guidance, direction, and individual understanding of what we want our product planning to accomplish.

Policies really represent the ground rules under which management says, in effect, the game will be played. For example: Are you trying to be a leader in given industries or special segments of them? Are you satisfied with a second, third, or fourth position? Are certain divisions to produce products that will be marketed through only one type of distribution? Are any divisions to produce only those products that can be adapted to available managerial talent, available processes, equipment, physical facilities, or available capital?

Do you have clear and precise objectives and policies for the guidance of your product planning? For example, in one of our client companies some of the policies indicate that products in the Electronics Division will be restricted to switches and semiconductors; the Plastics Division will only produce products protected by patents, although other companies may be licensed to make, use, or sell; and that any additional standard tool products to be considered for commercialization will be sold through industrial distributors.

These types of policies or ground rules obviously direct prouct planning down certain channels related to distribution, type of selling, product scope, equipment utilization, capital limitations, and related factors.

In one industrial company, the product planning framework is geared to the following objectives, as they relate to minimum acceptable sales levels, profit opportunities, return on investment, and other milestones for measurement: patent protection, if possible; tie-in with present marketing and distribution setup; annual sales opportunity—$500,000 or more; gross profit margins of at least 35 per cent; return on investment of 25 per cent to 30 per cent before taxes; be related to industrial field, construction, or consumer durables; and if seasonal trend, prefer fall or spring of the year.

Westinghouse Airbrake, General Electric, American Enka, Hamilton Beach, and DuPont are typical examples of companies that have adopted product selection yardsticks.

I am suggesting here that each of your companies establish its own product criteria for adding new products, eliminating dead

items, and refurbishing sick ones. These criteria, of course, are set up within the policy framework established by top management. It is axiomatic that in the choice of your product selection factors you include certain financial yardsticks to prevent dilution of profit performance and return on asset values.

Strengths and Weaknesses

This brings us to our third policy area, establishing corporate and divisional strengths and weaknesses. This is such a simple procedure that few companies bother with it. Your product prescription will grow out of an objective and thoroughgoing analysis of strengths and weaknesses which are spelled out in written form. For example, some of a company's natural strengths may include marketing know-how, relationships with distribution outlets, research skill, financial strength and brand loyalty.

If you want an unvarnished opinion in the process of preparing statements of strengths and weaknesses, I suggest you undertake a field survey of your customers, suppliers, and competitors. Collected data will be of some help in overcoming product line deficiencies as well as in pointing out future product planning needs. Some companies make a customer audit every other year. It is comparable to a medical checkup to see "how we are doing."

Company statements of strength and weakness cover management evaluation, product line appraisal, marketing and distribution, labor relations, production facilities, financial condition and results and related factors. They serve as a screening device to marketing management in determining what fields to stay away from as well as what fields a company is qualified to enter. Again, I urge a company to do this, following which there can be set up specific criteria for product planning. This brief background sets the stage for our discussion on organization and product lining in which we will cover operating rather than policy aspects of the problem.

ORGANIZATION AND PRODUCT LINING

What about sources of new product ideas, the role of the Sales Department, contributions from other functions in the business, and pitfalls to avoid in product lining? I refer to these as operating aspects.

Sources of New Product Ideas

New product ideas come from internal research and development—either in the form of customer engineering requirements or new product developments, based on customer needs as reflected through marketing research. Furthermore, company management, salesmen, customers, development, engineering and/or production personnel may make worthwhile contributions.

Not infrequently, outside specialists, such as Arthur D. Little, Illinois Institute of Technology, Midwest Research Institute, Rand Development, and other professional firms take on technical product development and handle the pick and shovel work at a fixed cost per shovelful. Companies such as General Motors, RCA, Borg-Warner, IBM, and Bendix Aviation have developed substantial research centers devoted to both pure and technical research to generate new product ideas.

Some companies get along by putting out carbon copies of competitive products but with a new twist in design, packaging, selling, or promotion.

A few companies undertake specific advertising slanted toward inventors. You may have to cull out 100 poor stones to find one "gem." Several years ago, I ran advertisements in New York, Boston, Chicago, and Los Angeles newspapers slanted at inventors. We screened out in excess of 500 replies. Result: four patented items purchased and 12 exclusive licenses signed up. This approach takes infinite patience and plenty of time. Since we were mainly interested in protected items, a patent search was an early screening step, followed by engineering evaluation, market appraisal, and financial screening factors.

Management consultants also stand ready to serve on product diversification studies. I am currently advising three clients in this area.

A reappraisal of some of the skeletons in your own patent closet may be productive, inasmuch as changing markets and customer requirements could "pop out" an earlier product discard.

It is essential to maintain a strong head of steam in your boilers. Presidential or vice presidential edict won't materialize a new product. You sweat it out by working all sides of the street on a continuing basis, and consistently encouraging internal research and development. By and large, successful managements plan, rather than "luck their way" into effective product lines.

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The Role of the Sales Department

The sales function is the antennae of product lining. It knows which products are slipping and which ones are bearing fruit. It has sharp tools available for measuring penetration and acceptance.

Market, product, and customer motivation research are among your appraisal tools. However, a "quickie or bicycle" survey may serve adequately as a screening device, particularly when there are precise product line objectives. Why probe with a scalpel where use of a meat axe will give an adequate answer?

The degree of market acceptance, or reasons why a product is liked or disliked, and adequacy of design and engineering all fall within the scope of marketing research. In other words, through qualitative techniques, management can and should know the adequacy of its products in the eyes of those responsible for their purchase and use.

Various quantitative determination techniques will indicate how large the market is, as well as the effect of proposed product changes on market size. Sales and market tests are useful in judging possible penetration. Research techniques are also useful to determine the demand curve, and its likely rate of growth. In those instances where a line is slipping, research can point to underlying causes and, thus, help to indicate needed corrective action. Competitive product acceptance, service, selling and policy deficiencies are other avenues subject to exploration through intelligent field inquiry.

In my opinion, marketing research provides the most orderly approach to an annual audit and evaluation of a product line. The sales force itself is in an ideal position to obtain the first gleanings of trade dissatisfaction, because of its frequent contact with customer engineering, purchasing, production, and maintenance departments.

You can follow a standard procedure in your marketing research activity on new products. It carries fact-finding responsibility for the determination of market forecasts—the size of the pie and our expected share of it; trade opinion of present products and their standing, reputation, strong and weak points, and related facts; reaction to proposed new products; effect of product type, size, quality, performance, price, service needs, and other attributes on estimated demand; and recommendations for product simplification and/or standardization based on trade opinion.

Most of us, at one time or another, are plagued with the problem of a declining product position. It is a responsibility of the

sales department and the product manager to ferret out the reasons, face up to the situation, and take the necessary remedial action. At a time like this, take a deep breath and ask yourself these questions:

(a) Is this product still with us because of inertia? Are there personal, emotional, or political reasons for keeping it in the line? I will never forget the board chairman of an eastern food company who told me that he would never delete a particular loss item from the line because his father had developed it.

(b) How large is the market? Where is it? What are its requirements? What portion can we capture? What will it take to do this and what competitive hurdles have to be overcome?

(c) Why is the product failing to gain or hold the admiration and affection of the market? The market researchers are constantly probing to determine the why's and wherefore's of a given market position.

(d) Are our plant, equipment, facilities, and personnel conducive to production on a profitable basis? Has the product been over- or under-engineered? Are there any tools available to convert this loser into a winner? And could the funds required be put to more productive and more profitable uses?

(e) What are the criteria for considering a product unsatisfactory? Lagging sales, low margins, technical obsolescence, marketing headaches, or what?

As mentioned previously, if we select proper screening factors, some of the "product dregs in our lines" would never see the light of day in the first place.

There is frequently, of course, a possible conflict in this area between sales and manufacturing. Production management may want to add a product because of existing facilities or unused equipment, whereas marketing management, through its product managers, doesn't want it because of a selling, distribution, or competitive pattern. The converse may also be true where a product manager wants to add a line that requires additional equipment and brick and mortar, which may be distasteful from a financial standpoint. This requires a decision from top policy-making executives, based on sales and growth possibilities and various financial factors.

Engineering and Manufacturing

Up to this point, we have discussed the sales department and the part it plays in product lining. Now let's review the

contribution of engineering and manufacturing. A company's engineering or development activity may be the best reason why it stands at or near the top of the pack. Alert engineers are everlastingly studying ways to improve present products through redesign or through processing, tooling, or specification changes. Competitive products are studied, torn apart, tested, and put through their paces so that we know "how we compare." New materials, new processes, new techniques, operations research, and nuclear developments may be pulled out of the engineer's or production man's bag of tricks to solve a major product problem.

Customer complaints, marketing research reports, technical advancements, and excessive costs are all grist for the engineer's mill. Each of these may become a source for better functional characteristics, redesign, simplification, or improvements which lead to better product performance, lower cost, or whatever the desired attribute happens to be. Obviously, neither the captive lab nor the contract research group can do a successful product development job unless it has been given a clear and concise picture of the specifications the product must meet. Moreover, from the research man's point of view, he should assume that the commercial market opportunities for a new product or process have been reasonably identified. The research job is to come up with a product or process answer with the minimum amount of experimental lab time.

Engineering development, directed toward product line additions, is fundamental to success. Technical development must play a significant part in any long-term product planning. Not lip service by policy makers, but a solid research budget is the attitude that must prevail. Whether we do pure research, group research, or applied project research, the job requires continuous, not spasmodic effort. How much we spend depends on our need, our financial ability, and on how fast we want to get there. Certainly, enough funds must be provided to be realistic.

A splendid source of research assistance is available from outside professional firms. They have the manpower, diversified experience, laboratory facilities, equipment, and a fresh viewpoint. To supplement or substitute for an internal research department, the professionals can and do make a real contribution to product improvement and new development.

Many a product has been saved from the scrap-heap because of production ingenuity. Modifications in process and equipment, stepping up output, and lowering unit costs are results common to all of us. Methods engineering resulting in process changes, labor saving equipment, reductions in direct labor, better

insepection and quality control, and savings in tooling costs are other typical contributions that the production man can make.

When symptoms indicate that a product is losing ground, the production man rolls up his sleeves. He takes a fast look-see at his facilities, machinery, processes, and methods and such facilitating services as inspection, industrial engineering, and production control. In this manner, he determines whether size of run, rejects, scrap losses, tool costs, or burden allocations are forcing him to lay down at the sales department's door a product that is too costly, inadequate in performance, design, or quality, or just too obsolete to satisfy trade requirements. It may be faulty design and high costs, or it just may be careless advertising, ineffective promotion, or weak distribution. Why hazard a guess? Bring in the marketing researchers to dish up the facts so that sound management decisions can be effected.

If you have a new product that has cleared the hurdles of pilot plant operations—a word of caution. Better to be a little slow and wash out the bugs. New equipment, costly tooling, and expensive processes require a thorough shakedown cruise before manufacturing and engineering will bestow their blessings. With adequate patent protection it is thoughtless to push out a product fledgling too quickly, because we are gambling with precious capital investment dollars.

Sometimes the shoe is on the other foot. Production tooling and equipment are readied for a new product that suffers from faulty engineering design. Or the manufacturing executive, surrounded with feelings of invincibility, may have unforeseen holes to plug on equipment, methods, personnel, and even cost reduction.

Financial Considerations

When it comes to product lining, the financial man is not only the safeguarder of company funds, but he frequently is the balance wheel. Every major expenditure raises in his mind the question of its possible effect on our cash position, on our fixed investment, and on our tax liability.

When you want to add a product line, better have answers ready to typical questions, such as these:

What are the latest technical developments?

What is your five-year sales estimate? What is the stability of the market, the sales and distribution tasks, and what are the possible growth opportunities?

Have you prepared a five-year pro forma earnings statement, balance sheet, and statment of cash flow?

How much additional working capital will be required for inventories, accounts receivable, and operating cash? Lack of financial staying power has put some basically sound products on the rocks.

What is the required investment for plant, equipment, and tooling? What influence will capital outlays have on depreciation?

What are the forecasted profit margins, gross and net?

What is the estimated return on investment, and how does it compare to past performance? Can top management look favorably on a new product line that may dilute past return accomplishments on both sales and investment?

Certainly we will tend to agree with the financial man's insistence that the revitalized present product or the proposed new product carry its own weight from a profit, investment, and return standpoint.

Admittedly, calculated business risks have to be taken in any product lining effort. However, sound financial management will insist that the final decisions be based on facts and seasoned predictions, rather than on vague and wishful thinking. Many products which, for financial reasons, were not added to a line might otherwise have became tomorrow's "product dogs."

The key to the whole integration process is teamwork. Without this, your product planning will be an empty bag of shattered hopes and aspirations.

Pitfalls in Product Lining

Our last operating question concerns those common fallacies or pitfalls which should be avoided in product lining. Over the years, we have all heard these half truths such as the following uttered as axioms:

A New Jersey manufacturer of heavy equipment: "We don't have the working capital to support the production and marketing of this machine tool."

A manufacturer of semi-conductors: "We will lose customers if we don't add this item to our line."

A manufacturer of nuts and bolts: "We should add this product since our salesmen call on those plants anyway."

And so, the reasons keep coming, based on believed demand, utilizing idle capacity, absorbing unabsorbed burden, getting the jump on competition, and so on, ad infinitum. Decision making

based on hunch, the influence of fancy rather than fact, or preconceived ideas of the top brass issued as edicts, all constitute possible pitfalls in adding products to our lines.

In this mad national rush to diversify, product diversification can also become a snare and a delusion. The product managers and the planners would do well to at least consider the following factors in their product diversification thinking:

Danger of adding too many products to an already overburdened sales force. No company wants to sell less and less of more and more products unless it has a strong licensee program.

Danger of flitting off to new fields at the neglect of undeveloped markets on present products. Some managements have a tendency to take themselves off the hook by playing in other product pastures instead of maximizing present product line results.

Danger of adding new product lines at a faster rate than top personnel can be made available, thus diluting key management effort beyond the point of safety.

Failure to recognize that over-diversification may rob present products of working capital needed to finance sales growth. A family-controlled business usually faces this problem.

New items come out of research and require launching capital sorely needed to finance expanded inventories, receivables, and operating cash on present lines. This is a serious problem to medium-sized companies whose ownership is unwilling to dilute its equity holdings through normal financing channels.

Unwillingness to recognize that an inflexible organization trained in narrow product fields may be unable to cope with both the evaluation and management effort involved in a product acquisition. For example, I know that this is currently happening in a machine tool and a precision watch company. Their product acquisitions have taken them too far afield from present managerial and technical personnel skills.

The secret of successful product diversification is to know what you are looking for in the first place, then to be able to recognize a good thing when you find it, and finally, to have your fact-gathering and evaluation facilities so organized that you can move promptly in order not to lose it.

Summary

In summarizing this final section on operating aspects, we must first be alert to all sources of new product ideas including

internal research, external research, product finding, advertising slanted toward inventors, use of technical schools, management consultants, and all arms of our own business.

The sales department, through marketing research, must locate, probe, and evaluate all facets of markets, customers, products, and competition, in order to provide the means for intelligent decision making on product lines, both present and proposed.

The product manager must know the current position and likely performance trend of each of his products and judge them against accepted and understood standards, including both profit and loss and balance sheet factors. He must integrate and coordinate product lining efforts with other functions of the business. Finally, he must recognize common pitfalls and fallacies and be alert to the dangers of expedient and unplanned diversification. Otherwise he may find himself in the position of the mouse who said: "I've had enough of this cheese—just let me out of this trap."

5

PRODUCT DEVELOPMENT FROM THE MANAGEMENT POINT OF VIEW

CONRAD JONES*

Booz, Allen & Hamilton

THE thinking we will share with you in this paper is drawn from a comprehensive management research project of Booz, Allen & Hamilton. This study was designed to knit together (1) the experience of more than 250 professional management consultants on our staff and (2) the experience of a broad sample of successful manufacturing companies—some our clients, of course, but many not. The project was conducted under my direction as our Manager of New Product Planning.

I can assure you that the marketing aspects of new products were well considered. Over 50 men on our professional staff concentrate on the marketing area. Many of the manufacturers surveyed are among the most powerful and progressive marketing organizations in the country.

Data on which our conclusions are based include the following:

More than 300 BA&H client reports, dealing with new product activity

Fifteen national conferences and seminars on new product management

More than 2,000 extracts from 600 written sources of all kinds

Forty leading manufacturers and twenty professional organizations selected for special study

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**Conrad Jones* is Manager of New Product Planning for Booz, Allen & Hamilton, management consultants. He directed this firm's study of new product management out of which have come principles regarding new products from over 400 manufacturers. His prior work experience includes engineering, personnel and advertising. He is a graduate electrical engineer from Purdue and obtained his MBA degree from the Harvard Business School.

New product data on more than 400 manufacturers and 100 professional organizations

THE PLACE OF NEW PRODUCTS IN BUSINESS STRATEGY

New products are the heart of our nation's growth plans. To illustrate, in Figure 1 the length of the bars is the dollars of sales growth expected by ten industries between 1956 and 1959. The shaded part of these bars is the proportion of this growth that is expected from new products that these companies did not manufacture in 1955. Note that from 30 per cent - 80 per cent of corporate growth plans is locked up in new products. And these are short range plans, only to 1959. A similar chart plotted further out into the future would turn most of these bars to solid gray and show that new products hold the key not only to growth, but even to survival for many businesses.

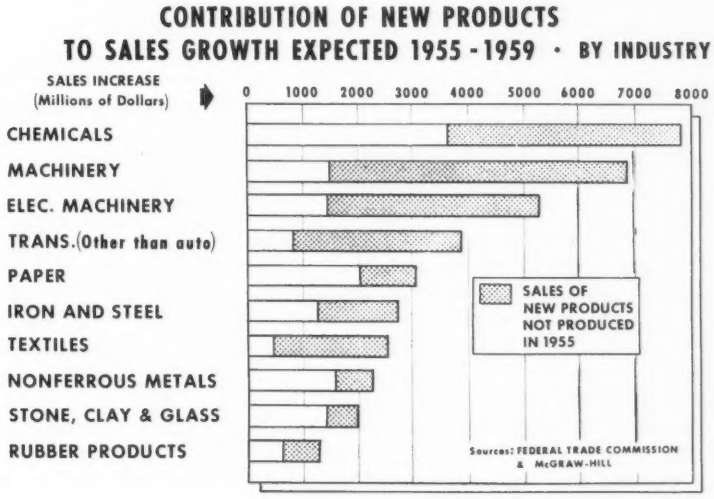

Figure 1

There are compelling forces behind this drive for new products. There is a life cycle that is characteristic of many—if not

most—products. Since all products are "new" at their outset, we can call it the basic life cycle for new products. (See Figure 2)

Products at birth generally begin moving on their hands and knees in an introduction period. This is a period of doubt, because even with remarkable advertising media—like TV—available to us today, getting across the knowledge of what the product is and offers is still usually a pretty slow process. When demand catches, sales rise rapidly until demand is saturated for all practical purposes. The product holds then at a high level until another new product rises to pre-empt its position, at which point sales decline.

This cycle varies in length—sometimes this cycle runs in only a couple of years; drugs are typically 4-5 years. Some have died only after a hundred years; for example, steam locomotives. But the point is that every manufactured product must expect to be pre-empted some day.

The typical curve for profit margins looks different. Profit margins start even more slowly than sales and build up rapidly during the period of sales growth. However, this very combination of rapid sales growth and generous profit margins, generates competition so that production capacity is increased to the point that it catches up with growing demand—and while sales are still rising, price competition will usually begin and profit margins degenerate. From this point on, even passable profit margins are sustained only by spartan cost reduction, heroic sales effort and the destruction of competitors.

This does not mean that there is no profit in these later phases. It means that rewards are markedly less, and accrue to fewer people. In other words, it's tough to make a buck.

Figure 2 symbolizes the basic secret of business success, which is the lesson of all business history: there is just nothing quite like being in the right business at the right time. You can change your sales territories, quotas, compensation, advertising and all the other variables—but if your products put you in the wrong business or at the wrong time on this curve, it is pretty tough to lick—no matter what you try.

So, as a business strategy today profit margins are sustained by constant differentiation, improvement and innovation, designed to pull away from price competition and to replace the shrinking profit margins of established products with new products that are in the right phase to sustain the over-all profit margins of the company.

The time cycle is getting shorter all the time. Every company is sitting on a powder keg of incipient competition. Seven billion

dollars of research and development expenditures this year are being devoted heavily to the objective of replacing existing products or diverting their markets. Under these circumstances, companies are remembering that a good offense is not only a good defense, but is also a good offense—in pursuit of growth as well as survival.

THE BASIC LIFE CYCLE OF NEW PRODUCTS

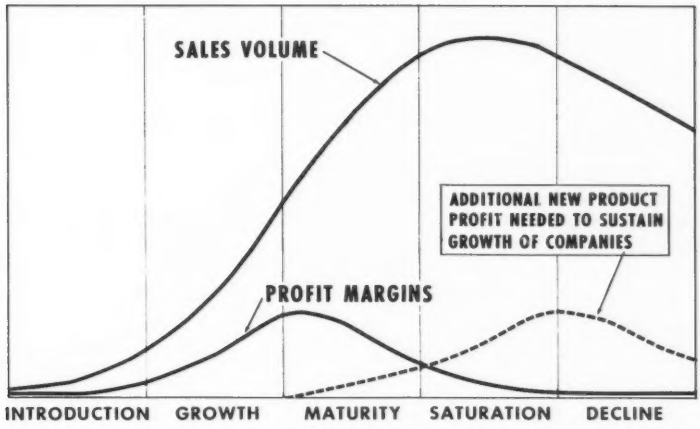

Figure 2

To define "products" in business terms we should begin with a definition of "business." Probably page 1 in chapter 1 in your business primer says that "every manufacturer is a middleman somewhere in the chain of converting and transmitting the resources of the world into human needs, wants and desires." He must plan his business from the customer end—not just the production end.

This is a concept being widely rediscovered and applied today. It is you professional marketing men who have sold this concept to management and you can take great pride in getting this point across.

As shown in Figure 3, products are the medium of business conduct. As we develop our new product we are actually developing a new business. Not just something to make—but something to be sold to someone, and at a profit.

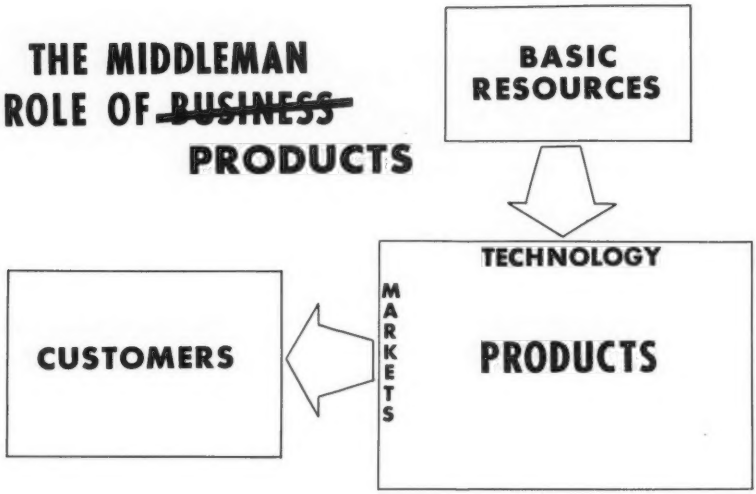

Figure 3

When we are picking a new product then, we are deciding what kind of a business we are going to be. We are setting the perimeter of our opportunity for success and the conditions that will as surely shape us as we will shape them. We are picking our customers, our competitors, our suppliers, labor unions and the entire environment in which we will struggle to succeed or fail. Such decisions must be top management decisions, unless it wishes to abandon the leadership of the company.

Note that a product must have two dimensions—a technology and a market. An "invention" alone is not a "product" until its market is established.

In Figure 4 we see that products may be new in either of their two dimensions; in their technology—(what is made and how) and/

or in their market (who is sold and how). The basic problem in new product decisions is symbolically represented here. The newer a product is—by definition—the less you know about it. New product progress requires unraveling not only physical mysteries through science, but the social and commercial mysteries of marketing. At least those that are mysteries to you—as all products new to your company are likely to be.

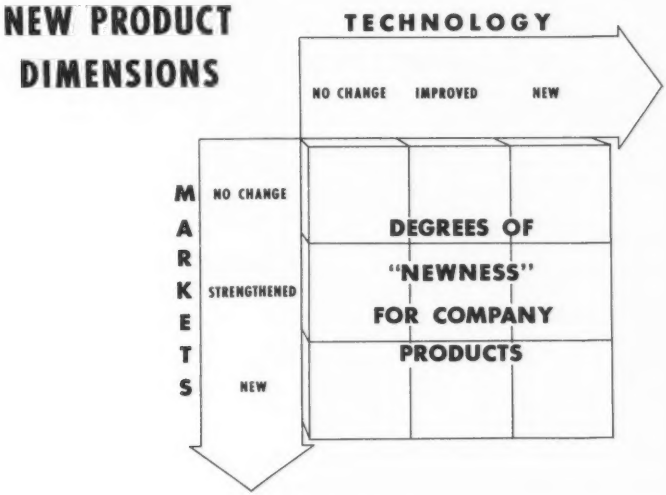

Figure 4

THE PROCESS OF NEW PRODUCT EVOLUTION—FROM THE TOP MANAGEMENT POINT OF VIEW

In business operations there is a process that we call "new product evolution," which starts with search for a new product idea and gradually converts an idea to a commerical product in profitable sale.

As far as management is concerned, it is the means by which company objectives are translated into the product success by which these objectives will be realized. In this process there is

a continual blending of technological and market data into a series of management decisions.

The professional marketing man who guides management on its decisions in the market dimension is built into this process.

Management controls by establishing points of decision. We should identify the major points of management decision in this process of new product evolution, as shown in Figure 5. If you will translate these terms into the words used in your own business, you can find these six stages in the new product process of most effective companies.

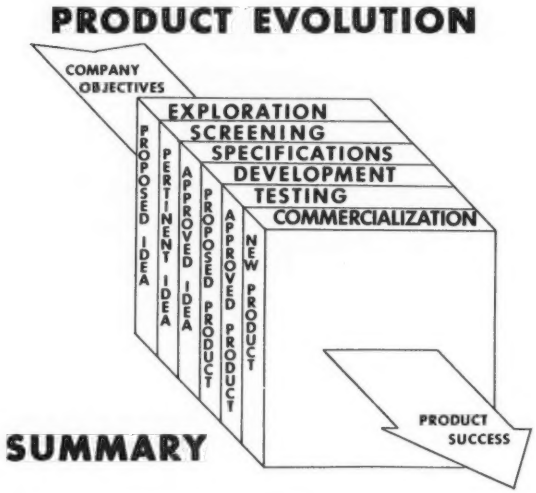

Figure 5

Let us simply define these stages here, and then look further at each stage for the major steps involved in each.

Exploration is the search for new product ideas.

Screening is the discarding of most ideas, principally in order to have the time to investigate a few in the depth required.

Specifications is the stage at which an idea is studied in depth and reduced to a concrete business proposition for approval prior

to launching its development. (This is the stage most frequently missing—and yet is perhaps most vital.)

Development turns a paper idea into a demonstrable product.

Testing includes commercial experiments in all departments to verify earlier business judgments and also to prepare for commercialization.

Commercialization is the full scale commitment of the company's reputation and resources to producing and selling the product.

Now, let's review a skeleton outline of the main steps within each stage, continuing to view new product evolution as a management process and talking as if we were the executive responsible for this new product process.

EXPLORATION

1. Determine the product fields of primary interest to the company.
2. Establish a program for planned idea generation.
3. Collect ideas through an organized network.

SCREENING

1. Expand each idea into a full product concept.
2. Collect facts and opinions, which are quickly available, bearing on the product idea as a business proposition.
3. Appraise each idea for its potential values to the company.

SPECIFICATIONS

1. Appoint persons responsible for further study of each idea.
2. Determine the desirable market features for the product and its feasibility.
3. Develop specifications and establish a definite program for the product.

DEVELOPMENT

1. Establish development projects for each product.
2. Build product to designated or revised specifications.
3. Complete laboratory evaluation—release for testing.

TESTING

1. Plan commercial experiments necessary to test and verify earlier judgments of the product.

2. Conduct "in-use," production and market testing.
3. Make final product decision, freeze design.

COMMERCIALIZATION

1. Complete final plans for production and marketing.
2. Initiate coordinated production and selling programs.
3. Check results. Make necessary improvements in product, manufacturing, or sales.

WHAT MARKETING EXPECTS FROM THE PROFESSIONAL MARKETING MAN IN NEW PRODUCT EVOLUTION

At each stage in this process management expects expert guidance from professional marketing men.

Exploration - Management expects the identification of opportune product fields in which the search for product ideas should be focused.

Screening - Management expects effective "quick and dirty" research—the intuition and judgment to sort wheat from chaff—based on inadequate information and an insufficient period of time.

Specifications - Management expects the identification of sales features and realistic commercial evaluation—*before* the product is committed to heavy expenditure, even development expenditures. Your next speaker from DuPont will strongly illustrate a principle we both hold: that the commercialization decision is properly made here, to be vetoed only by adverse later conditions.

Development - Management expects continuing and realistic marketing guidance for scientists and engineers at each decision point in the physical construction of the product.

Testing - Management expects valid marketing experiments on which to base final judgments.

Commercialization - Management expects sound planning of introductory sales programs and their follow-through to profitable performance levels.

It is clear that we can get no better results in the payoff stages than our earlier decisions will allow. Leading companies today are focusing on these first three stages. Failures in later stages—in well managed and adequately financed companies—tend to trace to decisions made in these earlier stages, for example:

> Product development was guided into fields that have no growth or, if growing, evolved into rigorous competition in which no one truly profits.

The wrong ideas were picked at that all-important "first cut," where quick facts, judgment and foresight are our principal tools.

Inadequate or inaccurate guidance was provided in selecting product features, anticipating sales curves and establishing price levels.

Blue-ribbon companies generally feel that they know pretty well how to develop, test and commercialize a product. They know how to conduct R&D, sales and production. The trick is to figure out which products to invest their limited manpower and money in. The shortage not only of scientific manpower, but other creative and management manpower as well, makes product failures hard to bear—even where the dollar loss can be borne.

MANAGEMENT POINTERS FOR MARKETING MEN ON THE EARLY STAGES OF NEW PRODUCTS

So let us turn again to this management process and examine the critical first three stages in more detail. I will continue to speak with the voice of general management, but we should listen with the ears of the professional marketing man to spot the need and opportunity for our contribution. Briefly as these points will be stated, these are in all sincerity the most useful pointers that I can contribute to your meeting today within the time allotted. We will cover in ten minutes what we could profitably talk to each other about for several days.

EXPLORATION

1. *Determine the product fields of primary interest to the company.*

There are only three logical approaches—into which we can shoe-horn every example we know of a rational approach to selecting product fields.

Analyze major company problems.

This includes problems of sales and distribution which an improved product or new product could overcome.

Evaluate the company's principal resources.

A major company asset is its sales skill and distribution power—and these do not appear on the balance sheet.

Identify external growth opportunities ready for exploitation—expanding markets, technological breakthroughs or rising profit margins. Here is a prime application for market research skills.

There is always room for "opportunism," which is not at all a dirty word. But luck seems to happen most and best to those who put themselves in position to be "lucky."

2. *Establish a program for planned idea generation.*

Identify idea-generating groups.

Marketing men are a prime source of new product ideas, although R&D appears still to dominate idea-generation.

Transmit to them a clear concept of the company's interest fields.

Unless men know the kinds of ideas sought, it is only by chance that they will spin off ideas that fit.

Expose creative personnel to idea-generating facts.

Give R&D exposure to market data and situations; marketing men should absorb all the technical data they can.

Conduct exploratory technical research.

This is a major role of basic or fundamental research—to turn up phenomena that will suggest new product ideas and provide the means for their creation.

Utilize team approach.

Without question, many methods of group thinking are an effective aid to creativity—in all stages.

Minimize distractions from current problems.

And this does not mean ivory-towerism; but does mean to budget stubbornly the time for advance thinking.

3. *Collect ideas through an organized network.*

Designate an idea collection point.

A surprising number of companies really do not have one.

Establish comprehensive idea-collection procedures.

Again, many companies are filled with "floating" and unevaluated ideas.

Cover selected outside sources of ideas.

And be selective. You can afford time only with sources qualified and willing to help you.

Solicit ideas actively and directly.

Aggressiveness and creativity are not parallel personality characteristics. Some of the best ideas must be "pulled out."

Consider each idea first on a "can-do" basis.

This is a warning against too much negativism too soon.

Treat the idea-man with care.

A serious problem to most new product executives, who must say "no" over 90 per cent of the time.

SCREENING

1. *Expand each idea into a full product concept.*

Translate the idea into business terms.

What will be sold and to whom? We are out to build a business, not just a "black box."

Identify the key business implications of the product concept and its developments.

Do not try to execute one of the popular 200-point checklists at this time. One or two big pluses or minuses is what we are after.

Prepare a written proposal of the product idea.

2. *Collect facts and opinions, which are quickly available, bearing on the product idea as a business proposition.*

Select evaluation techniques to fit the specific idea.

No pat formula fits every case.

Identify the best sources of facts and qualified opinions.

No single person is omniscient. Seek those who can judge this proposition best.

Use quick and inexpensive fact-gathering methods.

Telephone calls and basic references are about all for this stage.

Apply strictly the principle of "diminishing returns" to fact-gathering.

Always a good principle, but rigorously applied here. Two hours to two days per idea is all for the screening stage, typically.

3. *Appraise each idea for its potential values to the company.*

Estimate the magnitude of the profit opportunity.

Here is the criterion that always comes first. Most managements reserve the right to change the other criteria—if there's enough money in it.

Assess the investment, time and risk requirements.

This is the other side of the scale.

Check the idea against other selection criteria.

Each company is unique in some way and its particular characteristics must be considered.

Provide for subsequent review of ideas discarded or shelved.

Idea and screening records make good reading later. "Time makes all things possible" presumably.

Specifications

1. *Appoint persons responsible for further study of each idea.*

Select a small product team, representing major departments that would be affected by the product.

Marketing should always be represented.

Tailor team size and composition to the nature of the product.

No single standing committee is best for every proposition. Each product idea is different.

Select team members on the basis of their self-interest.

We can find in our experience no stronger power for getting something done than turning loose the man who wants to see it happen.

2. *Determine the desirable market features for the product and its feasibility.*

Determine characteristics of the market and its trends.

> What could be more important—and right now. Most market research money is spent too late.

Appraise both competitors and their products—existing and potential.

> Our success will depend not only on what we do, but also on what others do. No matter how smart we are, someone else can spoil it for us—even the competitor who is "dumb" enough to lose money competing with us.

Conduct experimental market and technical research within budget limits allowed for preliminary investigation.

> Sure. We need to experiment. Just keep it down to a couple thousand dollars and don't get a formal project going yet.

Identify "appeal" characteristics that would differentiate and sell the product.

> Here is the key factor. This is the source of profit margin.

Establish feasibility of developing and manufacturing a product with these features.

> Only now do we know enough properly to ask this question.

3. *Develop specifications and establish a definite program for the product.*

Evaluate various business alternatives to determine desired product specifications.

> This is the blending of opposed points of view. If we can't agree, let the product wait here—or even fail here—it's not very expensive yet.

Establish a timetable and estimate expenditures to evolve this product through succeeding stages.

> Creative work must be scheduled. Scheduling routine and repetitive work is much easier, but often not as important.

Reduce the proposed idea to a specific business proposition: in terms of time, cost, manpower, profits and benefits.

> This is what we've been after. Management cannot approve an "idea," as such.

Get top management approval or revision of the product idea in terms of its specifications and program-authorizing the development stage.

> Pre-project authorization by management is a coming universal in leading companies.

SUMMARY AND CONCLUSIONS

Now a good speech—like any good entertainment—I suppose should follow the time-proved format of a three-act play. In the first act you introduce your characters and run them up a tree. In the second act, you throw rocks at them. In the third act, you get them down again. We have completed the first act and you may indeed feel "treed" by the responsibility posed you by management. Now, we are ready for the rock-throwing act.

We have seen the vital role that marketing men must play in the management process of evolving successful new products. We have examined in an orderly fashion the opportunities for them to contribute to the management decisions involved.

In this process, management is playing the game of new product selection. The objective of this game is illustrated in Figure 6. They seek—out of a universe of potential products—those few ideas (out of hundreds or thousands) that literally are low risk and high payout. The relative success of our company will depend on the degree to which our resources are expended against projects that lie in the lower right area of this chart.

The key question in appraising risk and payout—at any stage of new product evolution—is "how many can we sell and at what price?" The high rates of failure for new products attest that it is easier to make something than it is to sell it at a profit. Perhaps, then, it is safe to say that the key ingredient of successful management decisions on new products is likely to be sound marketing advice.

Our problem now is simply this: knowing what we need to do, do we always know how to do it? Management needs to know—and early in a new product's development—the nature and size of the marketing opportunity and marketing risk. These are the crucial data that must underly new product decisions. And yet these market data are the most difficult to come by. It is often harder

to develop answers to the market questions than it is to the technical questions attacked in the laboratory and plant.

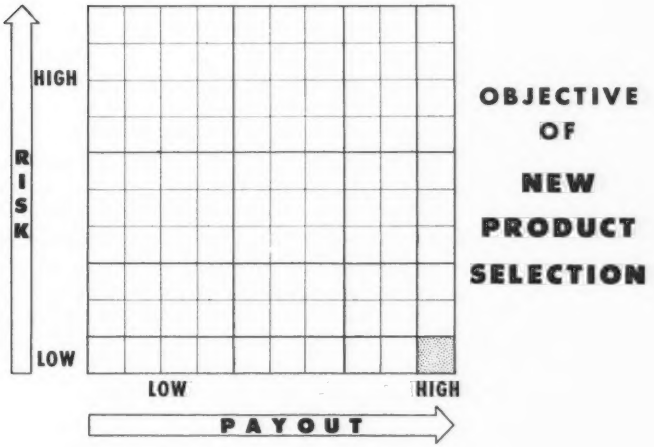

Figure 6

In forecasting on established products, marketing men do a pretty darned good job, considering the hazards involved. And they estimate pretty well on improved products for established markets. But the batting average of professional marketing men in estimating sales volume and price curves for new products—especially those that are an innovation in the market place—does not yet satisfy top management. Marketing men have sold management on their importance in early new product decisions, and now management is asking for performance. Many marketing men I know don't know whether to be sad or glad about the increasing demand for their counsel in this area.

Probably no one ever will be fully satisfied in attempts to forecast the future. And yet, the true test of the professional man and the scientific man is his ability to predict. A professional cannot shrink from prediction—he is always being asked difficult questions:

LAWYER:	will I be acquitted or convicted?
DOCTOR:	will I get well or stay sick?
MINISTER:	will I go up or down?
SCIENTIST:	can you make it and will it work?
MARKETING MAN:	how much will we sell and at what price?

Who can answer such questions *for sure?* And yet how can we operate our lives or our businesses without answers to such questions?

I have talked to hundreds of men who are seeking answers to marketing questions in evaluating new products. And most have at least a few pretty ingenious solutions. There is clearly no formula for new product marketing research any more than there is for scientific laboratory research. How you approach and solve a problem depends on the problem at hand and the time and dollar limits within which it must be solved. The design of commercial experiments and the conduct of commercial research is highly creative. Since we expect the most creative men to be well founded in that training or experience that allows them to think constructively in the problem area, we know that if the marketing aspects of new products are to be improved, it is we in this room who will have to do it.

The importance of marketing research has never been more widely recognized. Top management has never been more receptive to marketing guidance. This is especially true of new products—where top management and operating executives feel a *real need* for knowledge, as they reach out beyond the experience that they have had and the products that they know. In new product decisions, they have less confidence in the judgment and intuition that serves them so well on more familiar ground.

Marketing men are key members of product teams everywhere—formally or informally. You have an important role in every stage of new product evolution and management is depending on you. On behalf of management everywhere, I submit to marketing men the challenge of creating better ways and means of:

1. Identifying market opportunities for new products—early enough to help your management head toward the right business at the right time.

2. Estimating the sales for an untried product—accurately enough to make sound decisions.

3. Specifying the exact features that will differentiate your product and make it sell at a profit—even against price competition.

4. Cooperating effectively with scientists and engineers—learning their business and teaching them yours.

5. Developing significant commercial experiments—to prove out market hypotheses and business judgments.

6. Creating effective market strategies to establish—more quickly—profitable markets for the new products that deserve getting this far.

This is management's challenge to you—drawn against the background of the management process of new product evolution, which was my assigned share of this general subject. So, with Act II, I close, leaving to other and wiser men, like Dr. Borcherdt—to handle Act III, to show, by precept and practice, how to climb down this tree.

6

DESIGN OF THE MARKETING PROGRAM FOR A NEW PRODUCT

G. T. BORCHERDT

E. I. du Pont de Nemours & Company, Inc.

BEFORE getting into the aspects of designing a marketing program for a new product, I thought it might be well for me to give you a little background about the kind of business in which we are engaged in the Polychemicals Department of du Pont. This may help you understand why I'll be somewhat vague in some areas that perhaps are of major concern to you, and on the other hand, appear to go overboard in considering some of the finer points related to our problems, not necessarily of great concern to you. I hope, however, that I adequately touch on the significant points because my main objective in this presentation is to relate them in a fashion that describes an integrated program.

Our Polychemicals Department manufactures and markets "Zerone" and "Zerex" anti-freeze, a wide range of agricultural chemicals and various bulk chemicals such as adipic acid, methyl alcohol, and ammonia. On the plastics side, we are heavily involved in the polyethylene business, in fluorocarbon polymers, and a variety of nylon and acrylic plastics resins. We produce some semi-finished forms as well as finished forms of plastic products.

For this discussion I have chosen the plastics area for considering the design of a marketing program for a new product. I feel that here we can delineate specific factors in a very orderly and common-sense manner—and in addition we are dealing with

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**G. T. Borcherdt* received a BS degree in Chemistry from the University of Illinois and a PhD degree in Organic Chemistry from the University of Wisconsin. He started with du Pont in 1939 as a research chemist in the Chemical Department, and in 1946 was transferred to the Research Division of the Ammonia Department as Supervisor and then Manager of the Nylon Scouting Section. Shortly after the merging of the Ammonia and Plastics Departments, to form the present Polychemicals Department, he became Commercial Investigator in the Planning Division, and in 1953 was appointed to his present position as Manager of the Marketing Analysis Section of the Polychemicals Department.

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what is now a profoundly important area in coming to grips with commercialization of new products.

In Figure 1 I have depicted in simplified form the sequential flow of materials as a plastic is produced, shipped to a customer for molding or shaping with the shaped object then following typical channels until it reaches its point of ultimate consumption or use. You will note that I have made a basic distinction between uses of the product that end up in producer equipment and those that are ingredients of consumer items. Depending upon the extent

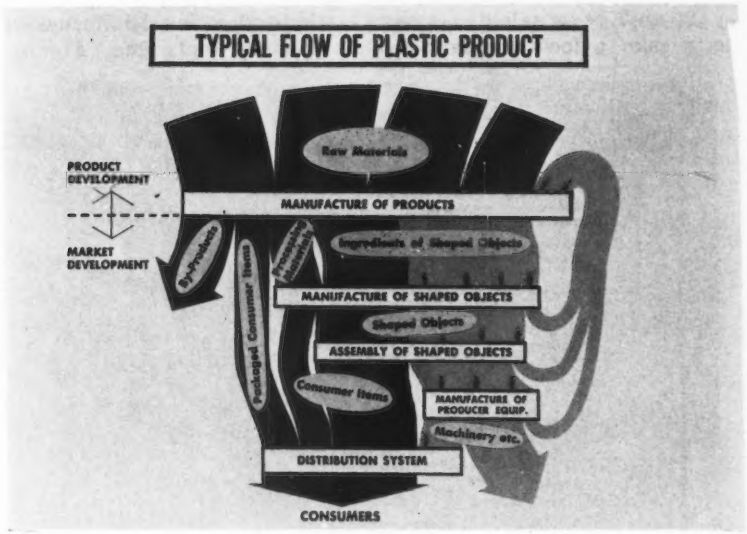

Figure 1

of this split, the over-all product involvement can be profoundly influenced, because, as you well know, consumer goods purchases and capital goods purchases can be and very often are markedly out of phase. I have flagged this in the diagram by showing that the machinery involving the product ceases to flow at the point at which it is used, whereas the ingredient portion of the consumer item flows beyond this point. Although not shown in this simplified diagram, producer equipment, of course, can and usually does flow

into the various other stages of manufacture. In this connection I have shown items produced by the customers, and their customers in turn, flowing back to the basic manufacturer of the product. This, I feel, can be a very important point to recognize inasmuch as valuable information can be obtained within your organization as to performance of items made from your products. You will find as I go along, that recognition of factors involved in the distribution through the stages indicated on this chart become principal points in my discussion, in particular the end-use factors involved. Also the factors shown on the left-hand side of the chart involving product development needs become important to recognize in the over-all design of the marketing program as these factors relate to the market development segment of the program.

Since I have selected a new plastic product for the discussion, let's take a look at what's been happening to plastics. Figure 2

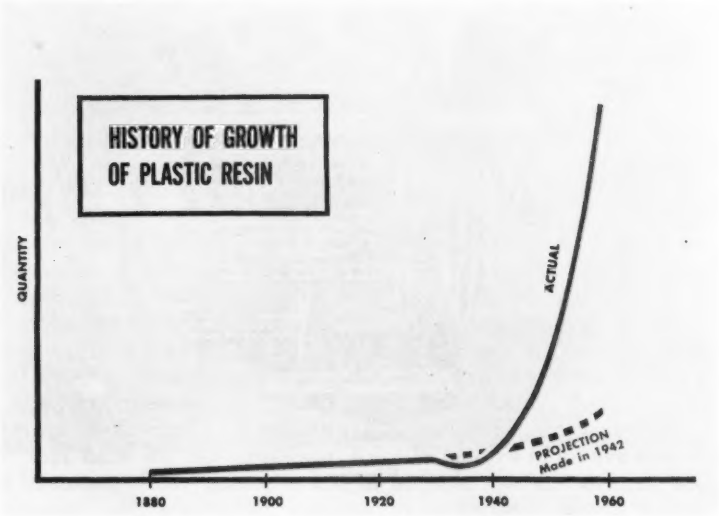

Figure 2

shows the history of growth of plastics resins. This is an arithmetic scale in which the quantity in pounds for 1956 was a little over four billion and in dollars about two billion. Now, some pretty learned gents did a little projecting back in 1942, and look what they came up with. How wrong can you be by relying on

historical trend projections? The point which I want to emphasize here—and as a matter of fact this is the heart of my whole presentation—is that in designing our program we must consider primarily what it is that can be achieved as a result of bringing this product on the market, rather than simply transcribing what has happened in the past to other materials that we have chosen to call plastics. I think you will find that the approach constitutes fundamentally the application of straight-forward common sense, although there are undoubtedly some pretty knotty problems to face in development of the various components of the program and what can be achieved by it.

To set the stage, I have shown in Figure 3 the basic factors to be considered. Obviously, it is necessary to predict quantity of sales we feel we can realize as time goes on. The key factors in

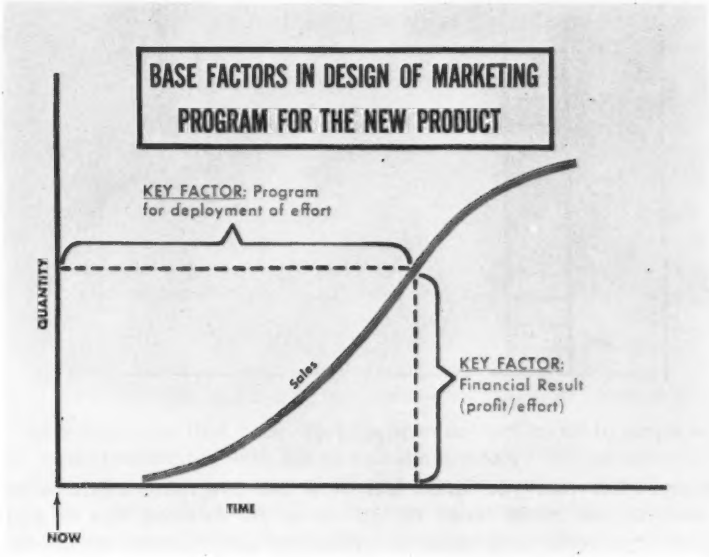

Figure 3

achieving these will be how we expect to deploy our effort in the marketing program—and resulting from this, whether or not it is worth while. In other words, can we predict an attractive profit position in relation to the effort required?

Conrad Jones has covered the importance of new products in maintaining a healthy business these days—so let's assume we have a candidate new plastic resin and tackle the job of setting the stage for decision on commercialization. Naturally, the first question we ask as the new plastic emerges from the test tube is "what's it good for?" So, in Figure 4, I've shown a quantity bar which describes, and I emphasize the word "describes," the extent to which the product is technically suitable for use. Or more

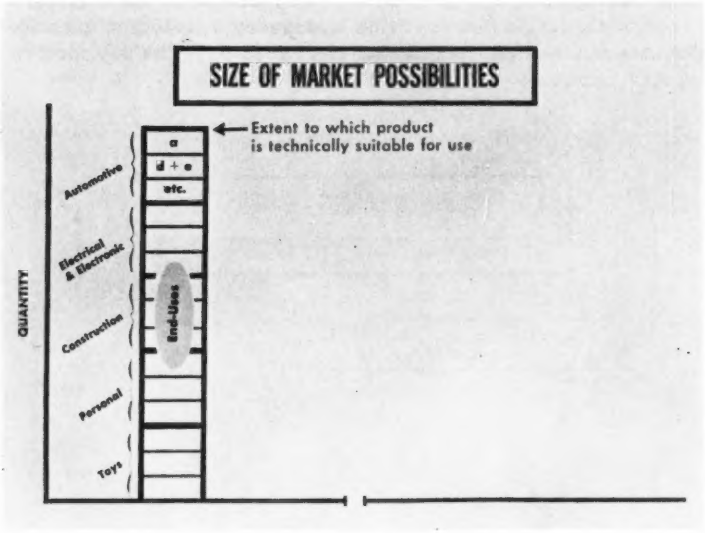

Figure 4

simply, what can you make out of it and how much would be required if you made these things out of it? In doing this we must consider specific end uses, and since we are considering whether or not it is worthwhile to commercialize the product, the size of the markets for these end uses must be built up. Since our tools for doing this are statistical data available from government and trade association sources and the like, it is inevitable that a first broad cut will fall into typical industry categories of the type I have shown on the left-hand side of the bar. Now, of course, if we don't build up much of a bar here, it is unlikely that we should be faced with designing a marketing program.

We are undoubtedly going to be competing in many of the end-use areas with other materials either now being used or, though not yet on the market, also technically suitable. And so, we immediately start matching this new product against these other materials to judge where the new product will do a better job. In Figure 5 I have added, therefore, a second bar depicting the extent to which the product is technically preferable for use. Now I want

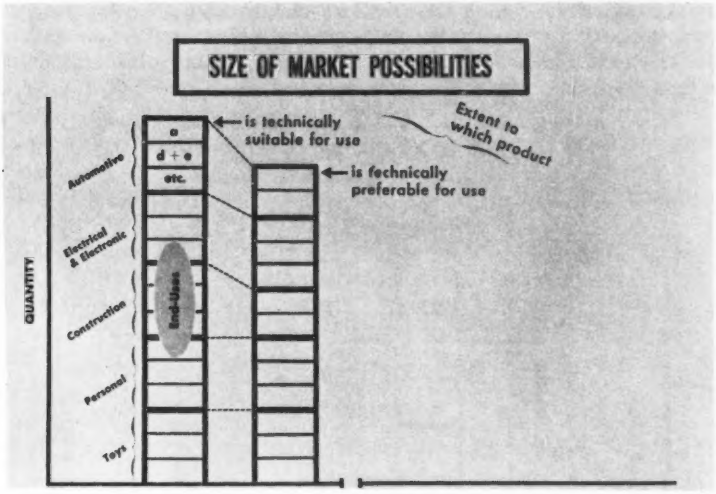

Figure 5

to emphasize at this point that we have not yet come to grips with the costs associated with the use of the product. We're just trying to find out where, because of its end-use properties, it will do the best job. You will notice I've dropped out some of the end uses in two areas, the automotive and the construction areas, as a possible typical situation faced with a new plastic resin. Thus, it may be possible to use it for a structural part, but if you really had your choice, and cost was not a factor, you would prefer to stick with steel or concrete, or possibly even wood. Now, I think this second bar with the data backing it up is a pretty important piece of information to have around. It is an important guide to indicate incentive for doing research and development to overcome cost

barriers involved in the use of the product. It tells you what could be fair game for sales efforts in the event that you could do something about costs.

But we haven't considered costs yet and we still have a ways to go in making up our minds as to what we should be able to do in the way of sales if we commercialize this product. So, let's take a next step and consider the impact of selling price on the size of these market possibilities.

In Figure 6 I have added to the picture the market size depicting the extent to which the product should be used over a selling

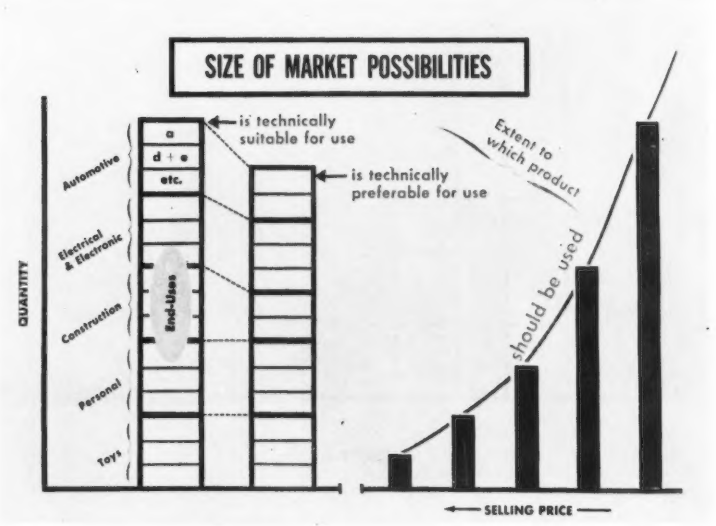

Figure 6

price range. Here is where the problem really gets complex because you will remember from the first figure that a plastic resin can go through several stages of fabrication before its real value as a potential end product has been assessed. Basically, the economic aspects of utilizing this material must be built into the overall picture in order to build the bars of "should be used" over the "selling price" range. The bar to the far right is, of course, equal

to the far left bar, since at a sufficiently low selling price the product should be used wherever it is technically suitable for use.

Now, at this point I want to emphasize that in no way do these quantities representing size of market possibilities tell us how much we can expect to sell. We still have quite a way to go before we are ready to tell our management how much we expect to be able to sell. These quantities, documented by the data used in their development, basically provide us with a tool—and possibly one of the most basic tools—to start considerations of the design of the program with its attendant expected sales result. In the next series of figures, I am going to try to depict the basic framework in which this information behind the "should be used" bars fits with respect to the consideration of various alternative courses that we could take.

In the first figure of this series (Figure 7) I have switched around the ordinates of the last figure showing the line of the "should be used" against "selling price" with selling price on the

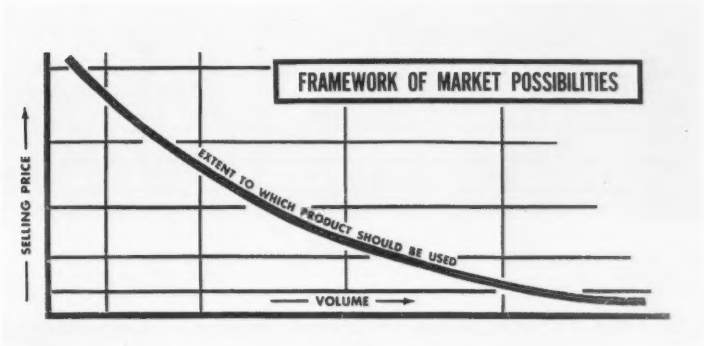

Figure 7

vertical and volume on the horizontal ordinates. In Figure 8, I've detailed the end-use market pattern by the various market areas associated with the built-up volume. Thus, at a high selling price we may have a single use in the automotive area and perhaps a couple of end uses in the electrical and electronics area where the specific properties of this new product have high economic value. Particularly in the construction, personal, and toy areas other competitive products beat out our new product if it must sell at a relatively high price. But as we go down in testing the effect of

selling price, D and E uses, or use areas, come in in addition to the A, B, and C areas. Nothing more emerges from the electrical and electronics area, but an F use pops up in the construction

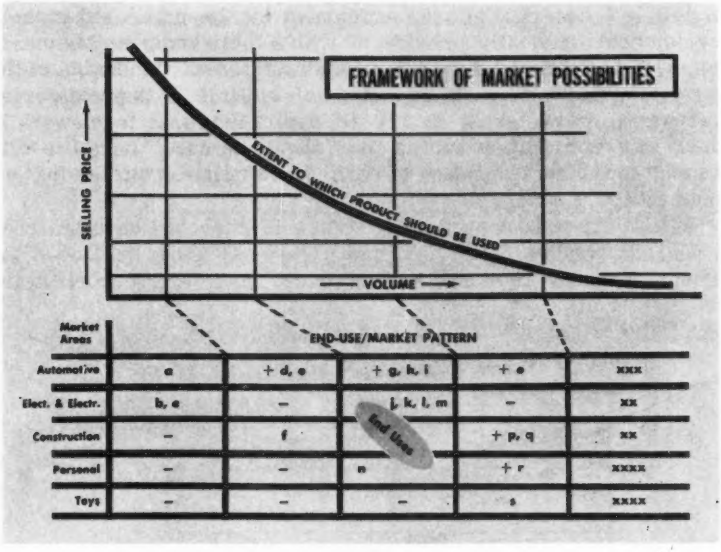

Figure 8

area. Still no personal or toy items, but these later come in as we go down to relatively low selling prices, and of course build up rapidly to very high volume levels, perhaps throughout the entire market area.

Now, I feel we are starting to recognize some factors basic to the design of a possible marketing program for this new product. But, as yet I've shown nothing that gives us a clue as to whether it could be attractive for us as a producer to put the product on the market. Undoubtedly, while we've been building this market possibility picture we have been developing cost and investment information on the manufacture of the product, and we probably have a pretty good idea of what it's going to cost us to manufacture it. Moreover, it is likely that the unit costs and unit investments in production facilities will be quite sensitive to scale, particularly at the early stages of volume growth.

In Figure 9 I have added the typical line relating volume of production to selling price for an attractive profit position for the producer of the plastic resin. As indicated, this figure depicts a

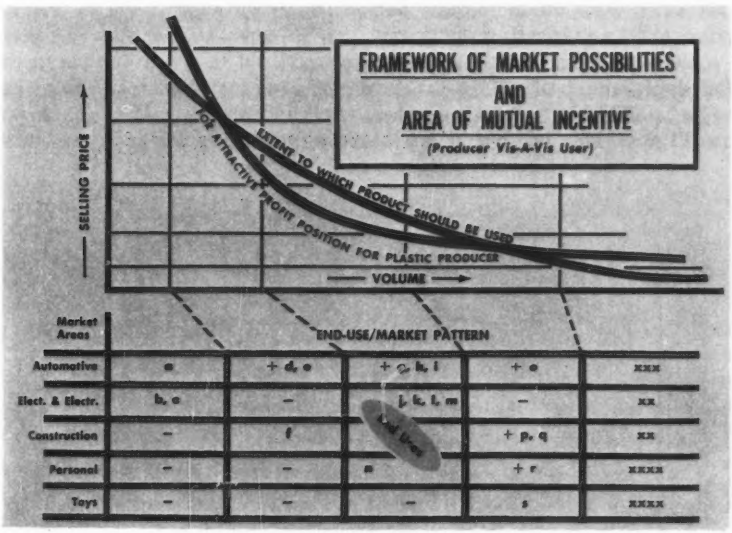

Figure 9

region of mutual incentive when you relate the line showing the extent to which the product should be used in the market with the attractive profit position line. In graphic form, it depicts whether or not there is likely to be mutual incentive on the part of potential users of the product and on the part of the producer for commercialization. If these lines don't cross, it seems quite unlikely there is any sound economic reasons for putting the product on the market.

Perhaps you can now see my reason for associating the lower portion of the chart on end-use market pattern with this selling-price volume picture. We immediately begin to get some clues as to the nature and kinds of end uses on which we can put marketing effort and expect enthusiastic response in the market areas, depending upon our pricing plans. Of perhaps greatest importance,

it indicates the order in which we will promote uses with the recognition of planting the seads for future promotions as selling prices may trend down with increased volume of production. However, bringing this up at this stage is really premature because we have not yet come to grips with deciding what our sales volume can be in the face of these opportunities, and whether or not we can capitalize on them will depend upon the effectiveness we can achieve in a marketing program.

Referring again to Figure 3, we must put together the program for deployment of effort in terms of cost in relation to the profit to be realized by achieving sales. Another way of putting it, shown on Figure 10, is that if we start a marketing program we must

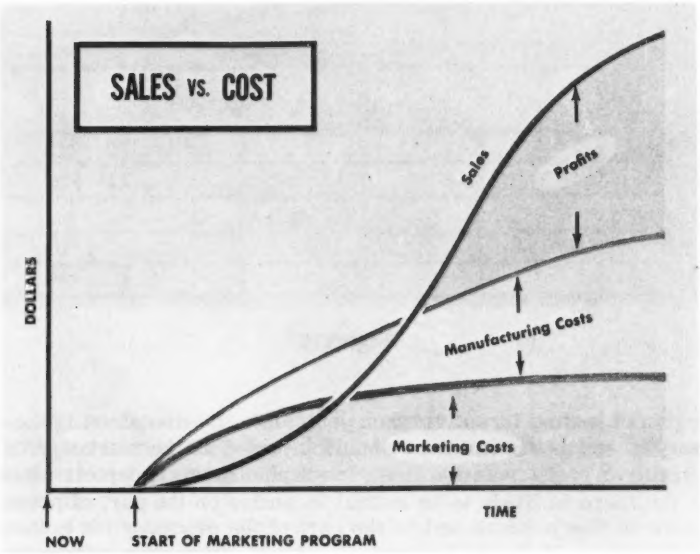

Figure 10

within an acceptable time, reach the point at which sales dollars are sufficient to cover our marketing costs, our manufacturing costs, and provide us with an acceptable profit. I have shaded the profit area and the marketing cost area as they are the key points

in today's discussion. Arriving at manufacturing costs is usually straightforward, and we are likely to know these within acceptable limits.

I've said nothing yet about forecasting our sales. Actually, we still are not in shape to forecast. There are likely to be more market possibilities than we can possibly go after within the limitations of our marketing facilities. Consequently, we must select from the alternatives facing us. It behooves us to consider very carefully the costs of attempting to develop the various markets, if we are to select the most attractive approach. Accordingly, on Figure 11, I've translated the previous figure into one depicting

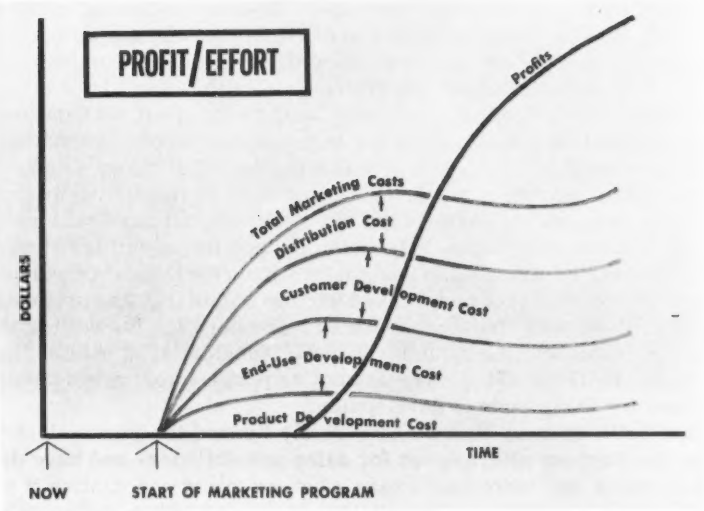

Figure 11

profit/effort relationship showing typical components of a marketing program for a plastic resin, which add up to a total marketing cost which must be related to the total profits derived from sales volume achievable.

Considering the components of the marketing costs, we will, in the event we commercialize, undoubtedly have continuing costs associated with research on improving and modifying the product.

I have indicated this on the figure as product development cost. There will be costs connected with working out ways in which to fabricate the end-use items. This is inevitable, even though we may not be making the actual end-use item ourselves. Our salesmen will be working with the customers, such as molders and extruders, whose customers may be assemblers, as indicated on my first chart. Thus, there will be what I've called here customer development costs. There will also be distribution costs. Obviously, there can be wide variations in the compositions and costs of these individual components depending upon the particular end uses involved and how we choose to engage in the market. For example, our immediate customers for a bag of molding powder may, in a captive sense, carry right through to the end-use area in some uses, and we, therefore may have very minor costs involved in end-use development with some uses. In some areas a great deal of work may be required in this end-use area, with our immediate customers merely picking this up with very little effort on their part. Or, if the end uses are predominantly in areas where a significantly new distribution approach must be involved, perhaps even to the extent that we have to be organized to handle distribution, this area may be of particular importance. Plastic pipe is an example here, where, if we elect to manufacture and distribute pipe and are not already in the pipe business, we will have real additional distribution costs. My point is that the specific end uses must be studied individually and the profit to result must be related to the efforts required in order to decide on our marketing program. Inevitably we will find that there are possibilities for selling the product, some of which might be quite substantial in volume, but in which there is not a very attractive profit-effort relationship, at least for early market development.

So, let's assume that we have really "cased the joint"—looked over the various alternatives for sales possibilities—and have decided within the individual areas what we could accomplish if we went out to develop these areas. On Figure 12 I have put together these data from the standpoint of volume, where the bar shows the market possibilities—that is, the extent to which the product should be used at the initial selling price. The faint segments of the stacked line chart indicate, in an accumulative fashion, what we believe we can accomplish as time goes on in each of these end-use areas to give an over-all framework of total sales possibilities. Then, through a selection of the most attractive ones from the standpoint of profit in relation to effort, we have finally arrived at an estimate of the sales that we believe we can realize from our proposed marketing program involving the various components of

product development, end-use development, etc. Finally, we have made a forecast—but you'll notice I've previously called it an estimate of sales. It can only become a forecast upon decision to commercialize.

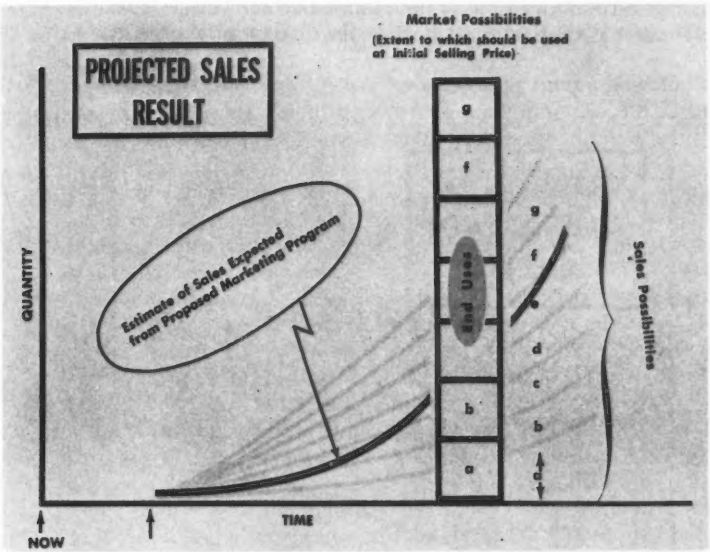

Figure 12

Well, that covers a lot of territory and obviously a great deal of soul searching and rather precise considerations. We have a marketing program to propose to our management with the sales volumes to be expected and the profits to be expected. At first glance, it looks like our job is done, but I would like to bring up one further point which I feel is very important to recognize and build into the initial marketing program for this new product. The cost of doing it must be a component of the over-all marketing costs predicted. This is that we had better be sure that we have built into our program the procedure for a continuing evaluation of the progress of the venture. Although we have done everything

within our power to predict results and plan our efforts, there is no question but that we will face road blocks, and that as new information develops, we may have to make some rather profound changes in the way we operate. In other words we need to project while formulating the initial program, the procedure and the facility with which to carry out the procedure of continuing analysis of market position.

On the last Figure (13) I have summarized the sales volume considerations previously developed but shown now in the form they will take if we commercialize the product and build its market.

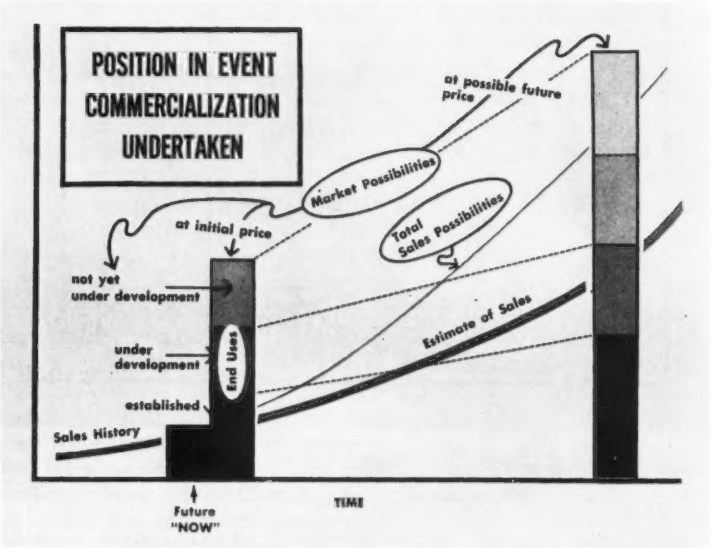

Figure 13

What I've done here is to "straw man" the position we will be in in the future (as indicated by the future "now" legend on the figure) from the standpoint of the marketing analysis requirements to assist the marketing organization in its continuing marketing decisions. Thus, I've divided our market possibility bar of extent to which the product should be used into three inevitable areas; namely, size of possibilities in uses already established, those

under development but not yet established, and those not yet under development but still conceptually sound. Just as we are now faced with projecting the position we will be in as to initial selling price at the time of commercialization, we will at this future "now" time be faced with projecting a future market possibility at a possible lower price as scale of production may increase, and so the bar at the right of the figure indicates this situation. I have flagged again the total of sales possibilities in light of these market possibilities, and have assumed we're up to date on the attractive areas to go after, and therefore, have put in the estimates of sales expected.

Now, you may ask why bother to show this future position requirement for analysis at the time we're designing the initial program? My reason is this—any continuing program on a new plastic resin comprises deployment of field salesmen to extend sales in established uses, the deployment of development technologists to get new markets started and, inevitably, the involvement of research and development technologists to test ideas and concepts for market soundness. And so, the opportunities to which these three stages of development are cued are separated in my figure. Of course, to be able to do this we must build into our marketing program an analysis procedure which will give us adequate knowledge of the stages of the end-use developments—and we'd better have it, with its costs, built right into our initial design.

I hope I've been able to lead you through my maze. Quite obviously what I have shown is a marketing analysis. Also, quite obviously, no single organizational segment of a marketing team can do the entire job. A variety of skills and experiences are required. In fact, what I have attempted to depict is the result of the entire marketing team's deliberations. Much of the factual market data can be developed by staff marketing research or marketing analysis teams, but ultimately it takes the operating marketing people to say just how they will do it and what it will cost, and this is as it should be. They will be responsible for achieving the result and, accordingly, in my opinion, should say what they expect to achieve. The design of the marketing program for a new plastic product must certainly be a team effort.

7

NEW PRODUCTS BY PROXY

RUSSELL B. ROBINS*

L. A. Young Spring and Wire Corporation

FOR the sake of simplicity and time, I'd like to put a framework around my subject today. If you've dipped even casually into the great and growing fad of diversification, you know there are many possible directions in which you can move as in chess.

As the rook moves, so a company can diversify horizontally; to make and sell more of the same or associated products. Or, it can go vertically; integrating toward complete manufacture, sale and control of a product or line from start to finish.

Like the bishop in chess, one may slant in the direction of products having new applications in other fields, or associated products to be marketed in present fields.

Then there is the courageous knight, who moves not in a straight line, but jumps over others to get in the most advantageous position.

I should mention, in this analogy, the King—and uneasy lies the head that wears a crown. The King moves little or none at all. He is a stay-at-home. And he is forever vulnerable to checkmate. To make this perfectly clear, it is my opinion that there is not one single firm in America, however kingly at the moment, that can afford to stand pat. Companies, like men must either grow or shrivel. They can't stand still. Therefore, those that want to grow should seriously study and think about the pros and cons of diversification. Because of research and development of new products and ever new industries, things are moving too fast for a company to stand still. Our company was, and still is, the world's largest producer of diversified wire products—but we don't feel very smug about it. "Here today and gone tomorrow" is no longer a gag.

**Russell B. Robins* is Vice President of L. A. Young Spring and Wire Corporation, where he has had extensive experience in the acquisition of new companies and products. Prior to joining this firm, he held positions with Ford Motor Company and Ralston-Purina Company.

To complete the line of chess power-pieces, there is the Queen-a very open-minded lady—ready, willing and able to move in any direction that seems best to advance and defend her product-pawns, and to attack competition.

I shall concentrate my remarks today on diversifying like a "Knight," because my company has expanded rapidly since 1953, principally through jumps outside our traditional field of the spring and wire business. However, let me hasten to make these points:

First, ours is not a policy of company acquisition for stock manipulation purposes. And I might add, "thank goodness," after seeing what the ticker has been quoting recently on the fortunes of some companies who have diversified in a way that, in my opinion, has been too rapid and without a program or framework.

Second, we have nothing whatsoever against diversifying from within, or internally developing products. On the contrary, our company research facilities are extremely active in this regard. It is simply that for the L. A. Young Spring and Wire Corp., the best move was to seek new fields as well as new products, and so we are acquiring entire companies and operating them as decentralized divisions.

"A person empowered by another to act for him," says Webster, "is a proxy." L. A. Young does not transplant its spring and wire people into strange fields of manufacturing and marketing. Instead it empowers the management of acquired companies to act for it. Hence my title today, "New Products by Proxy."

Let us examine for a moment *why* companies are acquired. In addition to the granddaddy of all reasons, "higher return on investment."

The current surge toward diversification differs significantly from the previous two in our economic life. The one near the turn of the century was primarily a wave of horizontal consolidations or mergers. In the second big wave, during the twenties, the prime mover was likewise the economy and power available through large scale production. Both horizontal and vertical giants grew. This time with promoters, underwriters and pyramiders of holding companies figuring largely in the picture. It was all part of the heady stock and financial manipulations of that period.

Today, the traditional attractions still account for much of the consolidation activity. However, something new has been added. Many managements have summoned up the courage and audacity to step out of their familiar lines into completely different fields.

Yet, at the same time this *risk* is being taken for reason of security—corporate security with growth.

Finding out precisely why companies diversify leads to a great many reasons. One prominent consultant lists 43 separate motives. Generally, though, these can be boiled down to four principal objectives: To grow or do more business; to offset seasonal or cyclical fluctuations; to offset a declining or stagnant market; and to take advantage of tax structures.

Like most companies diversifying, L. A. Young got started for a combination of reasons. Our principal products for nearly 51 years have been wire springs for automotive seats and for mattresses, as well as other diversified wire products. We also make complete seats and mattresses, spring clips, automobile window moldings and coat hangers. Most of our products, except during the war years, have been sold to automobile companies.

With the giant auto manufacturers becoming more and more integrated and producing more of their own parts, our market was declining. Our fortunes rose and fell with the industry. Competition among manufacturers of our type was over-crowded and intense. In short, we were in a squeeze. So we began our program of diversification. Our management faced the risks of going afield, and went.

Now, how do you get organized to do this job? What does it take? Our experience dictates certain pre-requisites to acquiring companies. Of paramount importance is a searching, fearless and honest inventory of the strengths and weaknesses of the parent organization. Don't kid yourselves. Maybe it isn't right for your company to operate additional businesses by "remote control." Maybe the diamonds are in your own backyard; so look well inside first. One of the remarkable by-products of such an internal analysis is how much you can find to improve in your own company.

Next, take time; think hard and study much. Haste may make not only waste, but disaster. But don't take too long or you'll miss the boat. Good buys are becoming scarcer and more expensive.

Then decide on the objectives, and put them down on paper, expressing policies clearly. Know where you want to go, how to get there, and what it will cost to get there. What direction, what fields, volume and profit objectives, how much money you can spend, and so on.

In addition, don't try to do this job with your left hand. Assign a responsible and qualified executive, working with a committee, to do this job. Many companies, including our own, also engage good consultants specializing in such work.

Out of all this soul searching, which, believe me, covers a lot

more ground than I have touched on here, and after buying our first company, we came up in 1954 with a clear-cut financial objective: Sales of $100-million by 1960—more than double our volume at that time—and with only half of it to come from the automobile industry. This meant improving our automotive business and adding $50-million of non-automotive business.

To attain this, we set up definite criteria as the basis of our expansion program, a wire screen mesh, through which any company considered would have to pass before we began serious negotiations. Here are the criteria:

Will we fit together? Not only the plants, but the people? Our company places the most emphasis on PEOPLE, which we believe are any company's greatest asset.

The company must produce end products, sold through a dealer or distributor organization; products which would carry our name. Let me explain this insistence, it was no mere desire for public glory. But for a generation we had little or no recognition acceptance or market acceptance for our own products. I submit there is nothing more anonymous than a spring or a coat hanger. The most avid seeker after motoring comfort has never walked into a dealership and asked for the car with the L. A. Young seat cushion or valve springs. The most discerning housewife has never insisted that her tailor use L. A. Young coat hangers.

Although we still make hidden products and component parts, most of our looking has been for products where we could attach our own name, build up our own consumer demand, control our own sales and in general guide our own destiny. In this way we feel we will best serve our stockholders.

A prospective company must be earning net profits amounting to a minimum of 25 per cent on invested capital before taxes.

It should have an annual volume of at least five million dollars.

The company must definitely be part of a growth industry or have substantial growth possibilities.

It should be engaged in some form of metalworking, the field in which we have manufacturing experience.

Of paramount importance, it must have young-minded, enthusiastic, aggressive management willing and glad to stay with the firm.

You will note that I have not mentioned purchase price which, although important, does not usually enter the picture seriously until final negotiations.

As you can see, we are not looking for the fast but flighty buck.

We mean serious business, and by this approach seek to reduce to a minimum the risks involved in entering new fields.

The next stage in company acquisition concerns "The Search." Again, we lay great stress on planning and systematic looking. Prospects are found in many ways. Some come to us, since the news has gotten around that we are seeking. We hear of others through brokers and consultants, some of whom provide helpful liaison work in this respect. I do a lot of reading, of course, to learn of good companies, and have a mailing list of some 1,500 names of bankers, brokers, and business men, which I remind occasionally of our interest in other enterprises. Our various plant managers, too, give us lots of good leads.

Once having a pretty good idea of our needs as to products, we actively research interesting fields to learn all we can about relative size and power of competitors, markets and distribution, acceptance of various products, company reputations and the like. Finally, the "scouting" takes me personally into many cities and hamlets; I have flown something upwards of 350,000 miles tracking down prospects.

This whole business of deciding on likely fields and screening out undesirables gradually narrows down to a few companies and eventually to the one best bet. At this point, our directorate examines the information which has been prepared on a particular company. This is a most meticulous board of inquiry, I assure you, and the decision to further invest time and money on following this particular prospect must receive the unanimous approval of the five of us so engaged. There is some sparring around and back-and-forth visiting with the prospect involved. Then we really get down to the hard investigation and negotiation that makes or breaks the deal.

The details of putting a company under the microscope will naturally vary in every case. However, I *can* highlight some of the areas to which we always pay close attention:

The Management Team. Early in the game we found that the performance of any given department of a company depended on more than the physical set-up or the business formula being followed. It depended primarily on how well the department head was handling his job. If even some of these men were doing a poor job, we oftentimes weren't interested in the company at any price, regardless of other assets. Why? Because if we should buy the company, those same men would be on our payroll, since we do not like to bring in new department heads.

Another thing we learned to look for is the caliber of the

sub-management supervision, the men who would be tomorrow's executives. We have learned to be wary of companies built around geniuses. Too many things can happen to one man; and a genius usually leaves mediocrity in his wake. Such a company in our opinion is not a good long-term investment. L. A. Young assays the real net worth of a company by its ability to build leaders in depth.

In addition to gauging management and supervision, we also do what we can to evaluate the working force, industrial and community relations and caliber of the field and distributive people. Though we have had no trouble in this regard, sometimes there are serious human problems acquired along with a company, and we like to know in advance what these problems might be.

Finances and Operations. In this regard we usually take to the the company we are interested in, one of our plant engineers and a financial man. We study the financial and operating history for ten years back, and develop a five-year financial projection, as well as a projection of how the firm will integrate with our operation.

Standing in the Industry. By this I don't necessarily mean size or volume. Rather, we try to find out what competitors, industry associations, and others think of this company; I suppose integrity, aggressiveness and soundness are what we are trying to check.

Facilities, Inventories and Products. With the qualified people we have available, it usually doesn't take long to size up the physical assets of a company. Again, we look not so much at size as at efficiency. Is the inventory and supply situation in hand? Is the machinery and equipment obsolete? Is there room for expansion? Things like that.

The product is then examined carefully to see how well it fits the market. Is the product line complete and in balance? What is the research and product development program? What have they been doing about diversifying from within?

Marketing Study. Even though my personal background is in sales and marketing, I'm sure it is not bias, but a fact, that a company's marketing program is of the utmost importance to its well-being.

Expansion through diversification is so often attempted by organizations dominated by manufacturing or financial schools of thought, rather than by marketing men. This, I make bold to say, is a prime reason why the experience of many firms has been something considerably less than gratifying when they attempted to diversify. I am particularly happy that the heads of our own business look at the world through sales-colored glasses.

And so, with the help of outside marketing counsel, we always make a thorough marketing survey, and always with the permission of the company in question, though the results are not shown them until after the deal is made or not made.

The marketing area may indicate a need for programs of further market research and development—to capitalize on changing consumer, product, distribution and competitive requirements—new or revised sales organization, distribution practices, advertising, training, promotion and so on. As a part of this study, we make a sales forecast, and ask the prospect-company to do the same. These are then compared.

After all these data are compiled and analyzed, they are presented to our directorate. If we are satisfied that this is a good situation, offering profit and growth opportunity, we sit down with the prospect and then, and not until then, do we seriously talk price.

In these final negotiations, our theme is the mutuality of interests in consummating the acquisition. The abundance of facts we have ready to put on the table show clearly why it is to L. A. Young's interest to buy or merge, but just as clearly, they show benefits to the seller. These are real benefits, too . . . for remember, this is not a hit-and-run case; we are going to live with these people. And when people are going to live together, there must be mutual benefits to both.

So that's how we acquire companies. It has taken me but a few minutes to sketch what can and has run into an average 15 months of hard work per acquisition. In roughly this fashion, we have added, since 1953, four divisions to the Layco family. Added to what we already had, that makes our lineup of products today look like this: Diversified wire products; complete seats and mattresses; power tail gates and power loaders for trucks and trailers of all types; steel dump truck bodies and hydraulic hoists; a line of hydraulically-operated construction and road-building equipment; heavy-duty fork lift trucks; electronics equipment; and military aircraft components.

You will notice particularly that in our construction, road-building and electronics products we are definitely beaming in on growth industries.

There is one more chapter in our story of acquisition, since "closing the deal" is not the end but the beginning. Once the company is bought, then what? How about organizing the new division or subsidiary? This is a story in itself, and all I'm going to do is sub-head for you the most important areas requiring attention:

Learning to live together. The biggest job in a physical merger is that of merging people. In a decentralized operation such as we conduct, it is important to exercise adequate home office control without impeding local management and operations. The more you practice the Golden Rule here, the better things will be.

Communications. The greatest aid to cooperation is understanding. We lay great emphasis on making sure that two-way understanding is complete, not only between the heads of our businesses, but in employee and community relations as well. Prompt, adequate and accurate exchange of data is a must.

Internal departments. Whatever our initial investigation has shown to be in need of extension, correction or strengthening, we start gradually and smoothly. Since we are not in the business of buying distress companies, our changes are usually in the nature of "growth moves" rather than house cleaning.

Marketing. Here is where we usually institute the greatest hustle and bustle, particularly concerning those products which will bear the Layco label. This involves sales plans and programs, distribution strengthening, re-franchising and education, advertising and promotion to be conformed, new goals and campaigns to be launched, blood, sweat, tears and cheers and countless meetings as the ship sets sail under the new flag.

From the time somebody first gets a glint in his eye, until the consolidated statements start appearing with satisfying, profitable regularity, this business of acquiring businesses to acquire products is a real, man-sized job. No doubt it would be much easier to just throw up a coin and call heads-or-tails between two companies . . . but we think the hard way is the right way.

Some publication writers who lean to a Sunday supplement style seem to think that divergent diversification is a huge joke—a bizarre and polygot exhibition of incongruity that will pass with the frenzied fifties. Certainly, in some companies the product combinations are extreme, and many of the current ventures are doomed to failure.

On the other hand, some of our most responsible observers have said, that gaining products through acquisition involves the least risk of any diversification method; it is no small task for a mother company to bear a new product-child and send it into the world to earn its own way. Further, while purchasing a company to get a product might at first seem more costly, it is frequently the most economical method to take over a healthy, going concern.

At any rate, with the procedures and checks we have set up in

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our acquisition program, we feel we have reduced the risk in this type of expansion to the level of that of any other management problem. And to those who ask how well it is working, we need only point to our five divisions profitably operating together.

Our progress has not been hurt any by the general economic boom of the past years. This involved some luck, but not entirely. We had, at the very outset of our program, a deep conviction that business would continue on the growth pattern of recent years or we probably would not have expanded at the rate we did. And regardless of today's precise statistical business level, we have the same deep conviction that the long-range trend cannot go anywhere but up based on the prime movers of births, appetites, desires and the great American dynamo of Eternal Change.

We of management must change with the living picture or fade from the scene. I have described how one organization, L. A. Young Spring & Wire Corporation, is becoming an economic chameleon by blending into the pattern of the American business of the future. I will not attempt to summarize all the steps I have traced, but I do urge you to hold steadfastly to these guiding principles:

Take your time, look well within, look well without, but don't miss the boat.

Jell your needs and wants into a written plan of specific and reasonable objectives, criteria and procedures.

Keep your eye on the money involved, yours and theirs, but look first and most searchingly at the *men* involved. Yes, yours and theirs.

Be market-minded, in your scouting, your investigation and your operation of the purchased company. I'd rather build and equip a plant any day, than try to recover a lost market or create one.

Finally, if your mind tells you diversification is for you, dare to do it! Don't wait for an impossible situation to slowly beat you down to your knees. Get up, get out and share in this modern pioneering.

Those of us at Layco are finding it a real challenge to step fast enough and sure enough to keep on top of our expansion program, but as managers we are really managing, in the fullest sense of the word. We are living, and we like it that way so much that we are looking for more!

8

INTRODUCING NEW PRODUCTS: SOME OBSERVATIONS

STEPHEN M. BARKER*

General Foods Corporation

COMING, as I do, from a food manufacturing company, I have had an opportunity to observe many of the things that happen when a new product is introduced, and I would like to pass along to you some of these observations.

Management Attitude - Lt. Gen. Lewis B. Hershey recently said in a talk about our military manpower: "We have carried things so far, we think science and organization, rather than character, can solve our problems."

New product progress is likewise a matter of character—individual and corporate. It is a management frame of mind. It must permeate the entire organization. It is a mixture of imagination, optimism and drive.

Defining Goals - If you too are in a highly competitive industry, you may find this kind of confidence—this unquitting vigor—an essential element in your new product program. If it doesn't exist, you might set about to change things. You can. I like to believe that nothing is impossible. You define new product goals, policies and objectives for your business. You undertake to sell these to your management.

After all, the firm wants profits. The new products road is an important road to profits. If you are going to get new products on the road, someone must clear the obstacles. The biggest obstacles are old thinking habits. You might try pointing out new product goals.

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A High Level Matter - The development of a new business within a firm—from a bud of an idea—is usually a fairly high level management matter. The decisions often require formation and change of policy.

Without a very live connection between the development man and the top management, new product projects never get off the shelf. So, if you have a good new product idea, you will probably have to nurse it to success yourself and see that your top brass adopts it and loves it so much that they will defend it in the hassles of the higher councils—come hell or high water.

New Product Teams - I've been asked, what is the best sort of new product team? Well, there are many ways to skin a cat. But, it seems to me that a committee in itself, seldom can do the job. It's like commissioning a group of sculptors to make one statue, or a group of women to bake one cake, or a group of men to write one letter.

It is often better for one man to consider the entire staff his committee, going to the production manager, research manager, purchasing agent, and advertising manager to work out ideas in each of these areas, and going to the boss on policy matters and matters of conflict.

In getting new shows on the road, the active boss of an outfit should be the chairman, and the new product man should be the staff's top sergeant.

Continuity - I'd recommend that early in a new product program you "sell" the sales and advertising men who will sell the product. Get their suggestions for the research goals.

Also, I recommend that you marketing men get into research planning. Contribute your ideas. Set the lab fellows straight on what might be most salable—before the die is cast.

More and more alert companies now fix responsibility for new product research and market launching in one man, or, in a New Products Department. Too often research men develop a product that marketing people don't accept. As a result, many good ideas die on the vine.

I can't overemphasize the importance of continuity of sponsorship—from inception of development to successful market launching.

Finding New Products - There are two ways of finding new products, whether you acquire them or develop them. One is to survey the field, the other is the random search.

A big program with a lot of money and enough foresight to plan way ahead can survey great fields of products. Such a systematic search, by a process of elimination, is the surest way of turning up new opportunities. But it is wasted if you don't put hard thought against the thousands of specific possibilities and combinations.

The job is bigger than the biggest corporations can fully exploit, and the smaller firm, or the small independent division of bigger firms, are better off tackling specific ideas as they turn up, prospecting by hunch and intuition rather than by survey.

Don't belittle the "haphazard method" of finding new products. A few months of hard "hunch and study" prospecting by one good man will turn up more enticing possibilities than the average firm can handle.

About Research - Research is increasing in this country at an increasing and fantastic rate. And the launching of research results is also. These two, it seems to me, are the most competitive weapons of business.

Selling can sell no more than the firm has to offer; advertising can advertise no more than the firm has to offer; and manufacturing can manufacture no more than the firm has to offer.

Research and the launching of new products, however, form a process of regeneration. They can expand a business far beyond the limits of its present products.

On Creative Research - Product and market research can kill good ideas. Don't let them. I'd suggest whenever you work on new product matters you consider yourself an artist, as well as a scientist and marketing man. Look for new facts, new scenes to paint, new pigments to use.

Sometimes the main features of the scene can be deliberately altered by the artist or the scientist to produce a better picture. It is not what exists that is important in this work, but rather it is what we can produce.

Look at great scientists such as Edison, Einstein, Kettering, Curie, Darwin, Michelangelo. They were synthesizers, idea men, as well as diggers and organizers of facts. They painted pictures men had never seen before. Each of us can do the same thing in marketing. The self-service store is such a creation.

The Good Idea and The Doubting Thomases - Recognizing the good idea and selling others on it—that's a critical job and one of the toughest. You get a good, new idea. Everyone thinks you're crazy. They fire examples of failure at you from all sides, like

a rain of arrows. From every hand comes "proof" your idea isn't workable.

You can't prove your idea will work until you've put it on the market and made it work. But that's natural. Your project wouldn't be new if it had worked before. The background of your project is a story of failures. You must find a way to get around the doubting Thomases. Don't try to sell your idea and leave it naked in a storm of doubts. Wrap it with a broad plan of development.

On Selling Your Associates - If you ever write such a new product plan keep it simple. Make it short so you can explain it in an informal moment or in a one-page memo. Make it compelling. It must fire the imagination. You're good if you can "sell" the brass at one sitting. More likely you'll find yourself on a long campaign. Don't quit too easily.

Your broad plan might include a guess at the market size, your sales, your approximate development cost, the kind of profit you can hope for, and also why people will buy. Cite sales and profit estimates for, say, the fifth year rather than the first. The first is not a good indication of what you really are gambling for.

Selling the broad concept is a tough job.

The Detailed Plan - Then you have to work out a thousand details. This detailed definition of the product, and the plan, is the most time-consuming part of the job and often the most fun.

Among other things, you will have to consider: product characteristics and advantages, price, package size, probable development cost, advertising approach, probable advertising cost, seasonal sales factors, probable sales, profit structure, plant required, year by year costs and profits, and other details.

In other words, you create an imaginary product and make-believe business. You keep constant contact with management, modifying to meet their wishes, holding firm and selling hard on those points you feel are vital—never quitting.

About Time - This is our enemy. In 1910 no man had ever seen the South Pole. For some strange reason in that year, two expeditions raced to get there first, Amundsen's and Scott's. Amundsen's expedition won.

Chances are, when your firm gets a hot program rolling for a new product, competitors, spurred by the same environment that got you going, are also getting started. You're apt to be in a drag race for leadership. In a competitive industry like ours, we can't afford to poke along.

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The Ultimate Product - We all want the best possible product to take to market. But, when your firm goes to market it may not need the ultimate in product, advertising, packaging, etc., unless the item is tremendously competitive.

Chances are you or I couldn't tell what the ultimate product should be until we've tried to sell it to the public. With a little experience you will want to modify product, package and advertisements. Why not do the "polishing" after you have some experience? It saves you money and time.

Product Research - The laboratory researcher in his desire to do an outstanding job sometimes can do too much research—too much "improving" on certain questionable features of his product. The management must then take it away from his apron strings and make it earn its own salt in the market place.

And market research fellows, too, can hang on too long—ironing out too many wrinkles and scorching the fabric.

Market Research - Home-use tests are very useful, but too often they tell that which a thoughtful manager was already willing to stake his reputation on—that this flavor, for instance, is better than that.

Too often market research is too specific. By eliminating all the variables but one, you create too theoretical a problem. The complex of package, price, advertisements, etc., is shattered. The report is fascinating, but often of little practical value.

You recall the words of Leo Burnett, one of the most astute and successful men of our day: "I have learned that the public does not know what it wants and that there is no sure way of finding out until the idea is exposed under normal conditions of sale."

For goodness sake, don't let your firm test a product to see IF people buy. Find out what you must do to get people to buy. Make whatever changes you must to build a profitable lasting business.

Test Market Variables - Management disputes are not easily resolved by "testing" several advertising campaigns, a couple of media approaches, several names, two product forms.

I once saw a testing operation for a single product that was expanded to cover about 30 cities. That reputable firm and its fine agency expected Mrs. Housewife to tell them what media was best, what weight of advertising expenditure was most profitable, which of several copy styles they should bet their money on, etc. There were over a dozen variables. To test each of these variables in only two cities, would have required not 30, but 300 cities.

In short don't avoid decisions by saying, "We'll find out in a market test." A market test is a proving ground to test the whole product, plan and concept.

On Advertising - It seems to me a shame that highly skilled advertising men often feel they have to test their advertising on a new product. Isn't it more logical to pick advertising people who have a fair record of success? Then, apply advertising media and copy principles that are tested. Isn't it better to run advertising experiments on old products that can stand the gaff?

I understand that when TONI was a new product they ran a copy test. The theme, "Which twin has the TONI?" lost out to several others. Fortunately there were some men around with judgment—and guts.

I believe that there is an undefinable element in truly great advertising. There is a simple test for it that a man of good judgment can use. That same undefinable element is common to all highly successful new consumer products. My same little test applies. I ask myself—can it really capture the public fancy? Can it fire the imagination of millions?

On Sales Projections - In the early stages of a new product project, the forecaster can do nothing but guess. The ability to guess with fair accuracy is a mark of competence in new product work. After the product has a little experience moving.through stores, we can project with more assurance, but it is still a guess.

Don't think you are being conservative by underestimating. Aim low and you'll hit low.

Now there is a tendency for the scientific marketing man to measure test market sales and make a straight forward projection. He interprets the public's willingness to buy. His forecast, let's say, is $10,000,000. This approach is bad. It is not dynamic. It is passive. It is the "let-the-public-determine-method" of creating a new business.

In a situation where this kind of forecast is made, it might be wise for the manager of the business to say: "Hell, man, I'm running this operation and I want eighteen million dollars in sales. I want you guys to find ways to do it. I want a better advertising theme. I want some hard thinking. If necessary, we'll modify the product itself, make it useful to more people, for more reasons. Let's not be limited by your market research. Let's shoot for 18 million bucks!"

Scientific Marketing - Don't think from some of the things I

have said that I am against market research, or scientific marketing. What I want to say is let's not be guilty of confusing a big program of *scientific* tests with the creative art we so badly need today in marketing—and in product evolution.

And let's not divorce marketing from technical development in our new product work. All too often they should be brought together much more intimately than they are.

Program Costs - A popular question is how much does it cost for a national introduction? The big investment in a new consumer product is informing the public. That cost varies. It takes less wind to say "You know Joe, this is his cousin, Bob," than to say, "This is Reginald J. MacIllhenny, of the Springfield Missouri Branch of the auditors for the truck line that damaged a carload of peanuts we were going to buy from the Smith Corporation."

So the tougher the job of explanation and the larger and more critical your audience, the deeper the breath you will have to take.

However, I suspect that there are certain minimum levels below which your voice is almost inaudible to almost everyone. For a national promotion to women on a new but simple grocery product, this minimum is probably around $1,000,000. It doesn't matter much whether the job is for a year or for a product with a three-month selling season.

However, a brilliant idea and, say, $100,000 can introduce a product nationally. Ideas are not measured in terms of dollars.

On Opportunities - I suspect the world's population will have doubled between now and the time the younger men in this room have retired. Most of us will see that day. Population is increasing, spendable income is increasing, leisure to use goods and services is increasing, the geographical limits of our market interests are increasing, the amount and scope of research is increasing at a fantastic rate, our storehouse of knowledge is increasing, our tools are increasing, and our wants are increasing out of all proportion to our needs.

Progress is not only rocketing forward, it appears to be continually accelerating. Never in the 20,000 years since man deserted the monkeys and came out of the caves has man moved so fast.

It is difficult for me to understand the pessimists all around us who say it's hard to get new products. There is no limit to the possibilities except our imagination. And there is no limit to man's imagination!

9

THE SHAPE OF THINGS TO COME

EDWARD B. WEISS*

Doyle Dane Bernbach, Inc.

WE are spending some $10 billion a year for advertising. We know that the returns from advertising are, in the majority of instances, rather difficult to trace in any precise way.

But despite the paucity of exact statistics on the gross dollar and net profit returns from advertising, there may be reason to believe that advertising does not always produce the sales returns that have been built into it—not because of weaknesses in the advertising program itself, but rather because of weaknesses in the marketing program.

That is a rather broad statement. Obviously it cannot be documented. Moreover, it is entirely clear that the validity of this charge will vary for different industries, and will also vary for companies in a single industry.

One of our great industries provides a fairly typical example of what I am referring to. The marketing of automobiles has fallen somewhat behind the advertising of automobiles. While I share with many others, the feeling that automobile advertising hardly ranks with the finest, there may be strong reason to conclude that automobile marketing is on a still lower level.

Some of our most important media have conducted rather elaborate surveys that have pointed up the chaotic situation that exists at the retail level in the selling of automobiles. The *"Wall Street Journal"* has conducted at least one national survey of this kind. As I recall it, in the resulting article the *Wall Street Journal* referred to current retail selling practices among automobile agencies as typifying the conditions that existed in the Oriental

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bazaars hundreds of years ago. In the column that it is my privilege to write for *Advertising Age* I have made the same point on several occasions in the last year. Those columns brought a larger response from the readers of *Advertising Age* than almost any other columns I have written over a period of some five years.

Whether or not the automobile industry is a completely valid example of the target at which I am throwing a lance, my fundamental point is that advertising, as a whole, has achieved for a great many brands a rather remarkable degree of pre-selling. Simultaneously, I think that the broad realm of practice that we call marketing has tended to fail to make even reasonably full capital of this pre-selling.

Let us take a rather simple point: We have a situation today in which a rather amazing number of brands are getting greater exposure to the public through advertising than they are through distribution. In brief, we have many brands which are advertised to audiences reaching up into the many millions. But this, with a distribution that exposes the merchandise at the point of sale to only a minor percentage of the advertising circulation.

A star example was the phonograph record. Up until a very few years ago, phonograph records were sold through the music or record store. There are somewhat less than 2,500 of these outlets that really amount to anything. Yet the pre-selling of phonograph record brands and artist names to millions and millions of people was hamstrung by this rigid marketing pattern, that traced back to hoary tradition rather than to the present-day requirements of the shopper.

Currently, the phonograph record industry is developing a marketing pattern that is enabling it to do a vastly better job of capitalizing on its pre-selling. Phonograph records today are being sold not only in drug outlets, in variety stores and in many hardware and tire outlets, but in food supermarkets which are beginning to do a whopping big percentage of the total phonograph record business.

This example could be multiplied. Of course, it is understandable that manufacturers may feel compelled to proceed somewhat more cautiously in their marketing programs than in their advertising programs. And yet, it could very well be that a considerable number of manufacturers, in a fairly wide variety of industries, are unnecessarily limiting the returns from their advertising, because they are unnecessarily limiting required changes in their marketing pattern.

More and more, I believe, it is correct to say that advertising is taking the position that almost everybody in this nation can buy

almost anything on which the individual or family sets its heart. But in marketing, too often we find that either preconceived notions compel the merchandise to go through a narrow bottleneck, or slavish obedience to hoary traditions achieves the same rather unfortunate end.

It is, therefore, my fundamental point that the total world of marketing has yet to re-orient and reorganize itself sufficiently and efficiently in order to make full capital of the pre-selling that is being done by advertising. I propose, therefore, to make, what I hope will be, at least a reasonably provocative exhortation to the marketing world to come out of the era of unknown and unsold brands and to pattern marketing so that it more closely conforms both to modern day requirements of the pre-sold brand, and modern requirements of today's shopper.

For example, will some manufacturers actually go into retailing on a substantial scale as a major step toward the goal of getting still better returns from their advertising investment?

Before World War I, there was a very small rash of retail store ventures by manufacturers. Sometimes these were limited to so-called "laboratory" or "experimental" or "show-case" stores. In other instances, manufacturers bought into retail outlets. Even today one of the leading men's clothing brands has a substantial, if not a controlling interest, in one of the large men's apparel chains. And, of course, through special leased-department arrangements, through extravagant allowance programs that include demonstrators, stock on memo, 100 and even 125 per cent co-op, etc., manufacturers in some fields are really in retailing. Certainly they bear the major burden of retail costs. The retailer merely provides floor space and a few mechanical functions. Why, then, might it not be wise for some large advertisers to go into retailing all the way?

After all, our major retailers are going into manufacturing. Indeed, not only are the giant retailers going into manufacturing, but they are developing powerful advertised brands which compete with manufacturer brands on consumer acceptance and even consumer demand. Naturally, the retailer's own brands get preferential display treatment within the store. The net result is that the manufacturer's investment in brand advertising is under attack.

It is fairly obvious that at least a percentage of the vast total in the bewildering variety of allowances that manufacturers grant retailers winds up as financial sinews for the store's own brands. I have long suspected that, if there were no allowances by manufacturers, there would be fewer store-controlled brands of any real strength.

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Since the mass retailer is becoming a manufacturer through one form of corporate control or another, why should it not be logical for the manufacturer to become a retailer, again through one form of corporate control or another?

Actually, if interlocking corporate arrangements and various special lease arrangements between manufactuer and retailer were carefully analyzed, I rather imagine it would be found that manufacturers, in at least some industries, are much deeper into retailing than is generally suspected.

Another development that may force some manufacturers into retailing is the growing concentration of retail volume into fewer and fewer hands. For example, Nielsen reports that in 1939, a food processor had to win distribution in 112,000 outlets in order to achieve seventy per cent coverage. By 1948, this figure had dropped to 90,000 outlets. In 1956, some 50,000 outlets will give seventy per cent coverage. (Of course, in some territories from fourteen to twenty per cent of the food outlets will give seventy per cent coverage.) Nielsen estimates that, by 1960, some 38,000 food outlets may give seventy per cent coverage of the nation.

It would seem as though the more concentrated retail volume is in a few hands. With the consequent uptrend in advertised retail brands, more manufacturers may be compelled to turn to corporate developments that will assure them the distribution they require.

And here is a startling thought. This sort of marketing development might even lessen the importance of the store-controlled brand to the retailer, since the retailer then becomes a corporate partner in the manufacturer's brand!

In any event, what we do know is that the manufacturer of nationally advertised brands is either taking over (through his advertising, his promotions, his detail men, his various allowances, etc.) more and more of the original retail function. In other words, our large national advertisers are in retailing almost up to their necks. In some instances, the manufacturer actually performs more retail functions to move his brand or brands than does the retailer himself! Obviously, this means that the manufacturer, to a degree never before reached, is a retailer in fact, if not in theory.

And we also know that the giant retailer is becoming a fairly large manufacturer; in a few instances, the giant retailer is also a giant manufacturer.

Putting two and two together and, of course, keeping a wary eye on the anti-trust laws, is it entirely improbable that, within the not too distant future, we may see a definite move by a few

manufacturers toward ownership or control of retail outlets through brilliant corporate innovations sparked by equally brilliant marketing strategy?

Will some manufacturers of some advertised brands look upon store control as at least one technique for getting a larger return from their total advertising investment? It is an interesting speculation.

Suppose we take another example. A considerable degree of our present day structure of discounts and terms was evolved many years ago, when there was little or no pre-selling of brands, when the trade had to do a real job of specialty selling in order to move the merchandise, and when only a small percentage of our total population could indulge its desires and wants.

Yet these discount structures tend to persist to this very day. They persist despite the fact that so many brands are strongly pre-sold. They exist despite the fact that the retail trade is really doing less and less specialty selling, and indeed less and less selling of almost any kind. They exist in spite of the fact that the dominent sales factor at the retail level today is the simple exposure of pre-sold branded merchandise. Thus, maintenance of a marketing status quo has not helped advertising achieve maximum results.

It was recognition of this fundamental change, brought about by advertising, that led General Electric to take a bold first, if tiny, step in marketing that involved reducing the trade's mark-up on certain GE items. Some of the retail associations were particularly vociferous in their condemnation of the GE move. There were talks of a boycott of GE.

Yet, the nature of competition is such that when a line is strongly pre-sold, when it offers a real value and a fine service, the large majority of retailers have little choice other than to carry it. As a consequence, General Electric not only did not suffer from any of the dire threats that had been made, but to the contrary, these particular GE items forged ahead.

Maybe it is time that marketing began to take a second look at terms and discounts and margins, etc., to determine whether the situation, as it exists today, is really making capital of advertising's pre-selling or is, to the contrary, making it quite difficult, if not impossible, for advertising to achieve the results of which it is capable.

As a part of this same study, we might also consider the fairly obvious fact that while our mass retailers are going in more and more for self-selection and self-service, very few, if any, of the presumed savings involved in getting the shopper to perform a

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part of the retail function are being passed along to the shopper. The food supermarket is the only exception, and in recent years it has been marking up its margin every year. This constitutes still another marketing road-block for advertising to handle.

Let's go on to another aspect of the marketing situation. Perhaps forty to fifty per cent of this nation's total retail volume is being obtained at night. A Sears executive recently stated that Sears does approximately sixty-five per cent of its retail sales on those days of the week when its stores are open during the evening hours. Furthermore, he stated that approximately fifty per cent of the volume done on these days is done during the evening hours. One-half of sixty-five per cent is thirty-two and one-half per cent. So, it would appear that, on the two or three evenings of the week on which the majority of the Sears stores are open, these stores do approximately thirty-two and one-half per cent of the total week's volume. That is quite an extraordinary situation.

I dare say that the food supermarkets are doing somewhat more than thirty-two and one-half per cent of their total week's volume at night. I think that the automobile agency does substantially more than thirty-two and one-half per cent of its week's volume at night. I think the same is true of major appliances, of furniture, of rugs, etc. It is certainly true of the volume being done by the majority of our drug chains.

The retail volume that is being done at night represents volume that is being bought with extraordinary speed. This is indeed split-second shopping. Split-second shopping, in turn, is a direct end result of brand pre-selling.

The marketing world has done very little to exploit nocturnal shopping. Very few promotions have been developed specifically for the nocturnal shopper. Very little has been done to exploit evening shopping in the vast shopping centers. Even the potentialities of the vending machine as a marketing factor in this shopping are receiving only small attention.

One of the great destroyers of the pre-selling that is done by advertising is the out-of-stock and under-stock situation. In present day marketing the brand that is unseen is unsold—and the brand that is only half displayed is one-quarter sold. The brand that is under-stocked out front is undersold out front.

The marketing world has failed to come to grips with this extremely serious problem. Beyond dispute, it will never be completely solved. But it is entirely probable that more concentrated attention on the part of the marketing man to this fundamental problem will result in better returns on the advertising investment.

Another marketing development that must come along is the

extension of self-selection and self-service techniques to merchandise categories in which it is not now being used, or in which it is being used in only a very small way. Bear in mind that self-service and self-selection exist, basically, only because of the pre-sold brand.

I think that the marketers of major appliances and automobiles could learn a good deal from the self-selection techniques that have been developed by the floor covering industry. The woven floor covering makers, in particular, have done a simply remarkable job of developing a marketing program that is enabling more and more of their retailers to make capital of the pre-selling that has been done by their national advertising.

In a completely removed field, I would point to the makers of Buxton billfolds as having done a job of fixturing that is enabling this brand to make better capital of its pre-selling. I might add that when the Buxton Sales Blazer was first presented to department stores, it met with a rather cool reception. Today some hundreds of these fixtures are doing an extraordinary job of capturing the sales volume to which this brand's advertising dollars entitle it.

Another example of a manufacturer who has done a splendid job of marketing in a manner calculated to achieve a higher degree of potential from its advertising is the maker of Libbey Safe-Edge Glassware. Here is a line that was formerly a staple. It was not looked upon with particular favoritism by the retailer. It seemed to lack any potentiality for excitement, for intriguing display, or for stimulating promotion.

Libbey, at one time, apparently concluded that the splendid advertising it was doing for Libbey Safe-Edge Glassware could not produce the desired returns if some of the fundamental marketing practices that were traditional in this kind of glassware were not radically changed. As a consequence, we have seen Libbey move into exciting ideas for packaging. We have seen Libbey move into brilliant fixturing. We have seen it do an outstanding job of styling and we have seen it merchandise glassware with the techniques that are properly adapted to the requirements of the present age.

The marketing man has yet to develop sales procedures that will enable the advertised brand, particularly when it is applied to a new product, to get a proper hearing in certain large outlets. This is especially true of those large outlets which have a so-called New Product Committee.

It is not without significance that one of the food trade publications commented: "The manufacturers do not realize that their

rule by the so-called consumer franchise has been taken over by the Buying Committee. In the final analysis, it is the Buying Committee which holds the lease on that consumer franchise."

Here is emerging a whole new world of selling, a world of selling in which the flesh and blood salesman seldom has an opportunity to make a personal presentation. It calls for totally new marketing tactics. National advertising of new products, new sizes, new price lines, improved models, new assortments, cannot be effectively capitalized, as long as the marketing man has not developed a persuasive procedure for presenting a new program to this sometimes impossible-to-reach New Products Committee.

I could list a number of other developments in marketing that have a close relationship to the results a brand may get from advertising. There is, for example, the slowly growing trend toward multiple departmental representation of an item. It was interesting to learn recently, that foundation garments in department stores are found not only in the foundation garment section, but also at the notions counter, at the knit lingerie counter, at bra bars on the main floor, and at a few other outpost locations.

Some of the food supermarkets are beginning to merchandise their percolators along with their coffee, etc. The pre-sold brand, again, is what has made possible this development. But the marketing man has too seldomly put a real drive behind this concept of multiple location on the retail floor.

I could refer also to the fact that the food industry, one of our great advertisers, has its advertising bottlenecked, to some extent, because its major outlet, the food supermarket, finds, or believes it finds, that it can earn only a microscopic net profit on food, or no profit at all on food. When a major industry such as food finds that its major outlet believes it is compllled to turn to non-foods for survival, then the situation is hardly conducive to a high capitalization of the potentialities of this industry's advertising. Here is a very definite problem for the food marketing man.

There is a great marketing problem for advertised brands involved in the peak periods in retailing. The Sears stores do about seventy per cent of their week's volume in approximately ten to twelve hours. Much the same is true of the supermarket. These are the very periods in which stores are so jammed that, even under existing self-service and self-selection conditions, the shopper is unable to buy, within the limited time available, much of what she had set out to buy. The peak hour situation is a direct result of the pre-sold brand. But the marketers of the pre-sold brand have yet to guide retailers, and especially the large retailers, in directions which will enable them to prevent the high

percentage of walk-outs and half walk-outs during these peak hours. And bear in mind that each one of these walk-outs represents a dissipation of the potential results from advertising.

I might add that since the shopper is showing a decided inclination to shop less frequently, it is entirely probable that peak hours will become more peaked. This, in turn, means that still more advertising potential will be wasted, unless and until the marketing man moves to alleviate this situation.

In closing I would like to discuss one avenue of approach the marketing man might take in seeking solutions to this fundamental problem of framing marketing so as better to capitalize on the preselling done by advertising.

This avenue of approach is offered by the coming revolution in electronic communications, a revolution that is already having a decided impact on the total world of marketing.

As a small sample of the revolution in marketing that lies ahead, consider this brief revelation of some of the marketing tasks planned by General Electric for its data-processing "brains":

We are planning to do a complete long-range sales forecasting job which will correlate such existing, but inadequately used, data as the birth rate and new family formations; disposable income and the level of employment; our models and prices compared with competitors' models and prices, and the availability of electricity in new areas and the number of new homes wired for electricity.

Our integrated system, when completed, will provide a dynamic distribution analysis; it will take information from sales records and projections and provide for management, an up-to-the-minute picture of the retail trade and a photo-flash picture of our company's distribution pipelines to all areas of the country. Coupled with budget applications and the production-control application, this should give management the opportunity to adjust selling effort and factory effort to make maximum use of the production facilities at its disposal. Properly handled, it should help us to make the right appliance and deliver it to the right place at the right time. This could have an immeasurable effect in producing more profitable operations.

And I might add that it will help to squeeze better returns from GE's advertising.

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THE CHANGING REQUIREMENTS OF THE ADVERTISER

DONALD E. SWANSON*

International Minerals & Chemical Corporation

IT is only human to resist change of any kind in our personal or business life. Nevertheless, life is changing around us. We have to constantly learn to develop new formulas in marketing to meet the changing marketing conditions. The requirements of the advertiser have changed a great deal in just a few years. No longer is a manufacturer merely sales or advertising minded—he is marketing minded. My experience lies entirely in the food field and I can only presume that the essential marketing problems and trends apply in the other fields as well. I believe they do.

Today's advertiser has forced himself to think in terms of unification and integration of marketing effort. In this present picture, every marketing element, sales, advertising, public relations, sales promotion, research, etc., is balanced according to its proper weight in a marketing program, and this balance of elements will vary from one marketing plan to the next.

This change has developed a new type of animal to supervise the important marketing function. He must possess the aggressiveness of sales, the imagination of advertising, the skepticism of research, the realism of accounting and the foresight of management. He may or may not be a specialist in one of these important functions. In today's common vernacular, he is called the marketing director and it is his responsibility to direct and coordinate on an impartial basis all phases of marketing.

**Donald E. Swanson* began his business career as a production supervisor for *Esquire*. Following service in World War II, he joined International Minerals & Chemical Corporation as Assistant to the Sales Director of the Amino Products Division. This division of the corporation was organized to develop a demand for Ac'cent through the food industry. During the last ten years, Mr. Swanson has served as Advertising Manager and Product Development Manager for the Amino Products Division and is now Supervisor of Consumer Advertising Services for the corporation.

What has caused this change to take place—not that there has been anything sudden or surprising about it? The simple answer, of course, is that better results can be obtained when the major activities are coordinated by one strong, sure hand. The more subtle answer, however, lies in the changing marketing picture.

Marketing channels are becoming more defined. We have learned to separate the wheat from the chaff as far as outlets for our products are concerned, and we find that the wheat—meaning the important outlets—are more independent and vital and difficult to please.

The life cycle of a product has been shortened. Due to the fantastic development of new products and product improvements, competition has never been keener. Because of this, I have heard that the average life span of a product, without some change, is less that five years.

Marketing mistakes are costlier today in terms of both dollars and loss of position. Company managements have become more selective about where investment dollars are placed. In other words, there is more reason for advertising expenditure to be determined for business reasons rather than on some automatic percentage of sales.

The public can be more easily swayed these days because of improved communications and more intensive competition. Largely responsible for this development are better television facilities and improved communication techniques.

In this changing marketing picture, both the trades people and consumers alike are being conditioned to respond to more intelligent marketing approaches, rather than to "snow jobs" or pressure tactics, which have been used in the past. This simply means that advertisers must continuously strive to do a better job in order to hold their position in the market.

In order to cope adequately with the changing marketing situation, the advertiser needs more complete services and specialized help. Help far beyond that which any single outside organization can provide. He will always have need of good advice and broad viewpoints, but he also needs specialists who can put these ideas to work in the most effective ways. Today's advertiser needs more exacting methods for determining promotion budgets and for test marketing. He needs more scientific guides for buying and measuring media. He needs improved trade and public relations services. He needs assistance in merchandising and market research, and I know positively that most food advertisers badly need improved trade advertising services.

Many of these services are not required to the same degree at

all times. That is why flexibility of operation must be maintained. More and more advertising departments in the future will be integrated into over-all marketing divisions, which, in turn, will act as central control systems, which coordinate the many internal and external specialists into one marketing team.

Already this has necessitated many drastic reorganizations within company structures. Marketing directors have been appointed and given broad responsibilities for all sales and promotion activities. In some cases, sales managers have been relieved of many internal management duties in order to allow more time for field sales direction. The job of product manager has been created so that the marketing director's responsibilities can be parcelled into smaller units. These product managers have full authority on almost every phase of product development and marketing.

The function of advertising has not changed, and never in its history has it been more important in the marketing picture. As our communications media improve, so will the effectiveness and value of advertising as a selling force. A great deal more, however, has to be accomplished along the lines of measuring specific advertising media, determining dollars required and evaluating results. Until improvements are made along these lines, many advertisers will continue to be skeptical and suspicious of advertising as a business function.

Just a few years ago, the functions of marketing were simply two—sales and advertising. Now, other elements have broken away from sales and advertising to become separate, specialized functions. Now these major elements, in addition to sales and advertising, are market research, public and trade relations, sales promotion, and statistical controls, and among other less defined activities, conventions. Today's advertiser must give honest consideration to each of these. Together, they make up the complete marketing job.

In trying to understand today's advertiser, one must realize that he has become greatly enlightened as to the function of advertising in business. I believe that, because of this enlightenment, necessary changes were made in order to place responsibility and direction of advertising and other marketing activities in the hands of management, instead of some lesser official or even with an outside agency.

Providers of marketing services should be mindful of these things:

> Advertisers want to remain flexible in their marketing operations.

The entire responsibility for marketing has been placed with one of top management, the marketing director, who is impartial.

There is a tendency toward greater use of specialized services.

There are great opportunities in public relations, especially trade relations, advertising measurements, copy testing, sales promotion or merchandising, and conventions.

Something is desperately needed in the field of trade advertising; so many of us feel it's stamped out of one mold.

An organization is needed to help in new product development and pilot marketing.

Advertising agencies are making great efforts to broaden their services. This is good as long as they realize that their main function is advertising and that they may not be able to match the services of specialists.

Perhaps the pay off is the fact that I speak, I believe, for small and medium sized clients. Many changes are necessary for us to compete with the giant clients. At the present time, many of the holes in our socks are not showing. But, at the same time, we are conscious of them and we are looking for ways of protecting them.

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THE CHANGING DEMANDS ON THE ADVERTISING AGENCY

CLARANCE HATCH, JR.*

Campbell-Ewald Company

THE progressive advertising agency, 1957-model, knows that the business of creating good ads is no longer just an Ivory Tower sort of thing. Advertising during recent years has grown extremely complicated. Anthropologists, psychologists, psychiatrists, market analysts, digital computers and sex are now in the act. It's all tangled up with a lot of very scientific things, and for the sound reason that it just doesn't work well unless it's a part of this complete marketing "mix." The enlightened agency is fast adjusting its entire attitude to fit the new over-all marketing concept.

Here in Detroit this adjustment is marked by a new and growing interest on the part of advertising agencies in a movement that someone has neatly labeled *Consumerism.*

You know, back in the old days, when agency people went about the business of creating an advertising campaign, they started out with one thing, the product, (and frankly they knew very little about that). The creative route was first the product, second the advertisement, and third the consumer. The consumer was on the tail-end of the line.

Today, that's all changed around. Stimulated greatly by competitive market conditions, and a more enlightened viewpoint on merchandising and advertising, the whole marketing strategy has taken on a new shape. Now it all starts with the consumer, makes a complete circle, and winds up with the consumer (the sale). And on the way around, this great circle is made more effective by greater knowledge of three things: Knowledge of the consumer,

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**Clarance Hatch, Jr.* has been Executive Vice President of Campbell-Ewald Company since 1941. His advertising agency career began in 1925 when he became a copy writer for Green Fulton Cunningham Company. In 1928 he joined Advertisers Inc., in Detroit, and the following year he began his association with Campbell-Ewald as a writer on Chevrolet. In 1935 he became Account Executive for the Oldsmobile account and in 1937 was promoted to Vice President.

of the product, and of techniques in advertising and marketing that might move the consumer and the product more closely together.

Interest in *consumerism* has brought about many important changes in the services performed by the advertising agency. There's a new accent on the inquiring mind. There's a new emphasis on market analysis, motivation research, rating services, and the like.

When today's agency's creative group tackles a problem, instead of starting with the product, they first want to view the whole picture of the consumer. They ask questions, searching questions, the answers to which are of tremendous importance in shaping the whole creative effort in marketing and advertising. Who are my customers? What kind of folks are they? What occupational group? What income level? How old are they? Where do they live? And recently, advancement in motivation research has sketched in large missing areas in the picture of the consumer—"What do people think about me and my product? What brand image do they have? What makes them behave the way they do? What goals do they have? What needs do they seek to satisfy? What sort of things will they pay attention to and believe? How best can we influence their decisions?"

All these questions are asked—and the answers are diligently sought out in order to better know the target of the advertising and the best ways to hit that target. It's a far cry from the old days when the advertising agency seemed to know little, and care less, about the kind of guy or gal who were potential customers for his client's goods.

Today, the enlightened advertising agency is using the advanced machinery of market research for a number of interesting projects in consumer analysis. One agency has used depth studies to determine the prevailing public attitude toward a certain television star to be featured on his program. Another has used research in order to figure out whether to use photographs or art-work in its print advertising. And naturally, all are engaged in a variety of projects on brand images—not only images of product, and of company, but brand images of distributors and dealers.

The new marketing concept has also resulted in a dramatic expansion of agency services to the client. By necessity, this expansion has swung over into fields of activity which, thirty years ago, would have seemed completely out of character for a firm specializing in the creation of advertising. Along with the old standard copy, art, contact, media and research departments,

the progressive agency recognizes the new marketing philosophy by offering a variety of new extra-curricular services. Some of these are for the purpose of studying the consumer better, others to gain better knowledge of product, and provide a broader, more fertile base for the creation of new ideas.

One agency here in Detroit boasts a special Woman's Department, specializing in the problem of understanding and catering to the feminine consumer. Another has a Show Business group, which, completely outside the TV area, works the year 'round on the creation of musical-review type performances, to properly launch a new-model car to the client's dealers. Several of the leading agencies have had, at least up to the time of the recent ruling of the Automobile Manufacturers Association, racing staffs which specialized in the handling and promotion of this controversial type of merchandising activity.

To be more specific, let me highlight a few dramatic activities that indicate the lengths to which some Detroit agencies are going in the marketing arena:

SCENE ONE - Broadway at 57th Street in New York. The Mark Hellinger Theater. Time: A day in October. A full-scale musical extravaganza of Broadway caliber, with New York cast, Broadway sets, and full chorus introduces to dealers and their salesmen one of the new-model cars for the new year. That show travels intact to six other leading cities and costs hundreds of thousands of dollars. Entire performance was dreamed up, lyrics, music and script written, the show produced, directed, staged and managed, *by the staff of an advertising agency in Detroit.*

SCENE TWO - Fairbanks, Alaska. Time: A day last Spring. Thundering into town, on the famous Alcan Highway, a fleet of new-model trucks, engaged in a special record-breaking test run from Detroit. As a part of this cavalcade were copy-writers, photographers, account executives and TV camera men from the Detroit advertising agency that conceived the idea.

SCENE THREE - The laboratories of Wayne University in Detroit. Time: A day in December. A digital computer, the so-called Magic Brain, the same type of electronic machine used on TV in the elections, clicks off computations in a market study for a car client's newspaper campaign. And sparking this project is the Research Director of one of the advertising agencies in Detroit.

SCENE FOUR - Daytona Beach, Florida. Time: January. Occasion: The famous Daytona Beach Races. Active in the pits are crews from three of the car advertising agencies in Detroit; copywriters, research men, artists, photographers, TV people, and product-information specialists. And driving one of the cars in the race is the so-called "fastest gal on earth," who comes from the racing group of one of Detroit's advertising agencies.

SCENE FIVE - Cincinnati, Ohio. The laboratories of a prominent market analysis organization. In attendance: A panel of 100 respondents along with script writers, account executives, and other TV specialists from a Detroit advertising agency. Occasion: The scientific pre-testing of seven different commercial announcers to determine the final selection for a client's prospective TV show.

That's the advertising agency business, 1957 model, Detroit style.

Before I close, I'd like to issue somewhat of a warning to everyone today who is absorbed with all those fascinating new machine tools of marketing such as motivation research, Nielsen studies, Starch reports, and the like.

In a talk made last fall, before the Eastern Conference of the American Association of Advertising Agencies, my good friend and former associate and one of the great minds of the advertising business, Jim Ellis of Kudner, made a characteristic comment that is very pertinent to the subject:

Jim told about a young physician in Waterloo, Iowa who went to work for a veteran practitioner. The veteran was a man of 74, keen and deep and ripe in vision. Concerning the old doctor, the young man wrote: "Doc's old-fashioned attitude toward medical machines taught me an invaluable lesson. He always insisted that I make a diagnosis first without the aid of mechanical devices. Otherwise, he said, the doctor's analytical centers become subservient to tangible evidence, and ignore the intangible, non-recording symptoms of pathology. Of recent years it has become impossible to take a firm stand in an opinion unless backed by a blood chemistry analysis, cardiogram, gastrointestinal barium meal and enema, fluoroscopy, gastric content examination and needling. But the interpretation of graphs, X-rays and charts is still subject to the frailty of human inaccuracy."

Jim Ellis's point was that we in the advertising agency business are not the only specialists who have our judgment checked. But the doctor makes an interesting point, we should always keep our native instincts in practice.

Modern scientific equipment is helpful, valuable, essential—to be sure. But in the preparation of good creative advertising, let's not get away from the fact that a leading role is still played by instinct, intuition and good sound common sense.

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THE CHANGING ROLE OF ADVERTISING RATING SERVICES

ARTHUR C. NIELSEN, JR.*

A. C. Nielsen Company

TO avoid possible misunderstanding I think I had better start by defining a "rating service" as I understand it. While most people think of radio or television when they hear this term used, I believe it will be generally agreed that the description applies equally as well to any continuing study of the audience reached by an advertising medium, particularly as applied to its individual parts. By "parts" I mean a specific time of day or an individual program in one of the broadcast media, or a particular page or advertisement in one of the printed media.

Rating services also go farther, in some instances, and apply a measurement index to the degree of penetration secured by the medium. Finally, there are auxiliary features of many rating services which provide information on audience composition and similar quantitative factors.

To try to sum it up, a rating service takes up the job where circulation measurements leave off and attempts to put a yardstick on actual performance, in units which can be applied to individual advertising campaigns.

The researcher must make his contribution by supplying his associates who are actually practicing the art of advertising, with factual information upon which they can rely—and which will permit them as a consequence to reduce business risks by narrowing the gap between the known and the unknown.

When you have as your objective the improvement of profits through more efficient marketing, you must pay particular

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**Arthur C. Nielsen, Jr.* is Executive Vice President of A. C. Nielsen Company and is in charge of the Company's Food and Drug Index services in the United States. In 1955 Mr. Nielsen traveled to Japan as a member of a four man American team taking part in a Management Seminar project under the auspices of the Japanese Productivity Center. He has also made several trips to Europe as marketing consultant to the United States Government. He is a Business Administration graduate of the University of Wisconsin.

attention to advertising, especially in view of the large investments involved. Research on advertising must begin with the media themselves, because they are the public vehicles which deliver the advertising messages. Hence, the first place to improve would seem to be through the process of providing better media research, and this inevitably involves the studies of readership, listenership and viewership, which I have defined as rating services.

GENERAL PRINCIPLES

I would like to suggest seven general principles which—if adhered to conscientiously by all concerned, including the media rating services—must certainly produce better rating services and better advertising.

The users of media as well as the media themselves must make their needs known to the researchers in more specific terms. General condemnation of a rating service may be fun and give vent to pent up emotions. Yet it can scarcely be expected to accomplish anything constructive. We must know precisely where the criticism rests and what end result is desired.

Criticism of rating services for failure to provide larger samples, or to rectify other alleged or real shortcomings are irresponsible unless tendered with an offer to pay the cost of effecting these improvements.

Users of research should understand that the social sciences, unlike the physical sciences, are not protected by patents. Techniques developed by one research concern can, therefore, be copied by another without recourse. For this reason, users should seek to limit their requests of rating service organizations for divulgence of techniques, and where divulgence is necessary, this information should be treated in the strictest confidence and not relayed to others.

Media should be encouraged to regularly supply users with factual data regarding circulation and other characteristics—hopefully in a form which would meet minimum standards of reliability. Buyers in turn must take an active hand in setting standards. Where added costs are incurred by the media, these should be, if not cheerfully at least objectively, borne by the users in the form of higher charges for the advertising space.

Media buyers should recognize that they have a responsibility to apply rating figures and other data supplied by media or research organizations with careful thought and judgment. Oftentimes insufficient allowance is made for the human element, for originality, distinctiveness, and other special qualities which are not as easy to measure on a statistical scale. Some time buyers, for example, are reported to be using ratings like a drunk uses a lamp post—to support his position rather than to throw light on a subject.

Responsible leaders in the media field should emphasize to their associates the manifold uses of research as a management tool—de-emphasizing its use as a sales tool. There are two kinds of research. Some buy research to know, others to show. From what we have seen, those media will profit most that buy research to *know* and hence to learn more about the needs of their subscribers or listeners. Once these needs have been properly satisfied, circulation and audiences build themselves and sales problems diminish. But of far greater significance is the fact that the medium following this course will be a more effective advertising vehicle.

Finally, the research organization must continuously review its own procedures, always with the objective of improving its services. In my opinion any research agency which fails to evaluate its methods at regular intervals is on its way down hill.

So much then, for the principles or road signs which would seem to lead to better rating services and better advertising research generally. May I now respectfully suggest certain specific matters which would seem to deserve additional attention.

PROGRESS NEEDED

In evaluating advertising, one requires precise tools, for at least two reasons. First, powerful as it may be, advertising is only one force in creating sales. Our job in advertising research is not simply to measure the over-all effectiveness of a medium in general terms, but to try to determine the relative effectiveness of different media and different advertisements. It is to help advertisers to measure the differential impact of "ad A" versus all other ads, or "schedule B" versus all other possible schedules. The second point to keep in mind is that the changes which can be expected in an advertised brand's share of sales, as a result of all

forces—including advertising—are usually small. For example, the net change over a 60-day interval among such highly advertised products as breakfast cereals is of the order of five per cent.

With that preface, let us examine some of the areas where the greatest need for progress seems to exist.

More precise knowledge of advertising expenditures. Since advertising is a competitive force and doesn't work in a vacuum, we must know the expenditures of not only our own brand but of all competing brands. Those who would know the effect of their advertising might commence their efforts by supporting those organizations which are trying to gather media expenditure data.

Knowledge of the number of advertising messages received, when and by whom. Such data are basic. Unless one knows how many people received a particular advertising message as differentiated from the number of potential receivers, little is known about the value of the medium or its effect on sales. Circulation is not the same as readership, nor sets in use the same as listeners to commercials.

Development of concepts and techniques which would permit inter media comparisons. This step must, to a large extent, wait upon the solution of the previous problem. Until a quantitative measure can be placed upon the number of commercial messages delivered by various media, little can be accomplished by debating, for example, the relative impact of a one-minute TV commercial versus a full page four-color ad. Obviously we need, but now lack, comparable audience data for all major media. The age old "apples and oranges" argument that such comparisons cannot be made is invalid and irrelevant, because in reality such comparisons are made in the preparation of every advertising budget, involving as it must a decision regarding the division of expenditures between media. Once we get the quantitative measurements we need on messages received, it should be practical to fix relative values between time units and amounts and types of print space.

Knowledge of consumer buying behavior. Here there are a number of questions still plaguing the practitioner. For example, what is the relative proportion of men and women buying a particular product? What is the relative influence of both on buying decisions? To what extent do consumers deliberate before purchasing? How are brand decisions made? What is the relationship between the decision to buy a product and the actual consummation of a purchase? I feel certain if we only knew more about

how people buy, we would have a much better basis for deciding upon sales strategy and planning advertising and merchandising campaigns.

Knowledge of trade advertising to dealers. The effect this has on display, including point of purchase advertising, and finally the interaction of these forces on buyers already preconditioned by major media advertising is a fertile area in which to work.

If we are inclined to feel baffled by the multitude of obstacles and problems confronting us, it may be some consolation to remember that progress in the sciences is cumulative. Since science is dynamic, the facts of science are always tentative, subject to modification and correction.

It is comforting to remember that the Greeks possessed a working model of a steam engine 2,000 years before James Watt succeeded in making such a device pump water from a coal mine in England. Leonardo da Vinci conceived and built models of an airplane not too far different from that which the Wright brothers flew at Kitty Hawk 400 years later. Da Vinci's dream could not become a reality until the invention of a gasoline engine made the dream practical. Even the jet engine is an old idea. However, it had to wait upon modern metallurgy to unlock the secret of how to contain intense heat. So today it seems that we should face the future with confidence, at the same time taking great pride in the progress which has been made, recognizing that advertising research was born and nurtured during the business lifetime of its present practitioners. Before there was a dream there was a dreamer; before a plan, a planner. Before advertising effectiveness, better advertising research.

13

USE OF CONSUMER SURVEYS FOR DETERMINING PUBLIC OPINION AND DIRECTING INSTITUTIONAL ADVERTISING

C. THEODORE SMITH*

American Telephone and Telegraph Company

THE telephone business, as is the case with most other businesses, is constantly taking measurements of the quality of its product. We have operating indexes, for example, which tell us how good our day-to-day service is. And there are indexes of specific aspects of service; for example, long distance, information, installation, repair, business office—just to mention a few. Indexes like these help the operating people to run the business efficiently and economically. But they are primarily concerned with the technical excellence of the service and are based on our own internal standards.

What we need to know, in addition, is how the public feels about us, for their ideas as to what constitutes good performance or bad performance may differ from ours. And then, too, there are many aspects of the business which affect the public's thinking and can't be expressed in terms of technical indexes.

Most businesses, of course, have many ways of finding out what people think of them. Comments and criticisms are made to employees on the job and in social contacts off the job. Customers write letters to the company. Comments about the business appear in newspapers, on the radio and on TV.

While we pay close attention to all of these in the Bell System, they do have their limitations as indications of the opinions of customers as a whole. Essentially, these are volunteered

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*C. *Theodore Smith* has been with the American Telephone and Telegraph Company since 1929. In 1947, he was appointed General Statistician for Market and Public Relations Research. Mr. Smith is a graduate of the University of North Carolina and holds an MBA degree from the Harvard Business School.

comments and people are most likely to complain about things they think the company can or will do something about. In addition, they represent comments of the more articulate members of the public and these are not necessarily a representative cross-section.

To overcome these difficulties, the Bell Companies for some time now have been making public opinion surveys to find out what people think. The first such study was made in 1925 in Detroit for the Michigan Bell Telephone Company, by the Houser Associates, a firm which pioneered in attitude measurement. In 1927 another study was made by Houser in Pittsburgh to find out what people thought of certain ideas being featured in the company's institutional advertising. In 1929, Houser made a second study in Pittsburgh, in this case to get information regarding attitudes toward the telephone service and the company as a whole. These have been followed over the years by a good many surveys on a great variety of public relations problems.

In 1946 a continuing nationwide study was set up. This study, now made once a year, provides periodic measurements of the attitudes of our customers toward the quality of telephone service, the value and cost of service, and the company in general. Data are also obtained on recall of subjects being featured in telephone advertising and of the media in which this advertising appears.

Just a word on the field procedure used, since it is a little unusual. We refer to it as the "leave-and-pick-up" method. Two questionnaires are left with each of the customers included in the sample with the request that they be filled in by adult members of the family (usually husband and wife). Completed questionnaires are picked up the next day. This procedure was decided on after considerable experimentation to find one which could be operated economically over the large geographic area served by the Bell System and where possible influence of interviewers on results would be largely eliminated.

The communities to be included in each survey are picked at random. The chance of any particular exchange being included is in proportion to its size. Within each exchange "key addresses" are picked from the current telephone directory—again on a random basis. The key address becomes a starting point for the interviewer who proceeds from there along a prescribed route until he has distributed a specified number of questionnaires.

In this process we get completed questionnaires from about seventy per cent of the telephone homes at which questionnaires are left. About forty per cent of the respondents are men.

Reports of the results of these studies are prepared and receive wide distribution. This distribution covers top management down through district level people and sometimes even lower. Results become the basis for special releases, film strips, discussion meetings, etc.

Here are some of the things that the trend study information does for us:

> It gives us a measure of service as the customer sees it.
>
> It reveals opportunities for service improvement or, where this cannot be immediately undertaken, of explaining the situation.
>
> It gives us some line on the effect of service improvements and remedial programs.
>
> It tells us how our customers feel about broad topics on which they normally do not volunteer comments; our reputation in the community, how well managed we are, etc.
>
> It provides us with a measure of the impact of such things as service disruptions, changes in the economic situation, etc.
>
> It tells us how well the various messages in our advertising are registering.
>
> Most important, it tells us how attitudes toward the telephone business vary from year to year, thus helping to suggest themes for advertising and public relations activities.

In addition to the use of the trend study results for this purpose, surveys of special problems are also made fairly frequently. In some of these we have used the straight questionnaire approach; in others, we have used depth interviews, used projective techniques; in general, methods that have become associated with the term "motivation research." These studies have helped give us more depth of understanding of how the public sees us and how they feel about us. One thing in particular which they have pointed out is the tremendous importance of telephone employees as ambassadors for the business.

There is one other method we have used rather extensively for getting information to help in the direction of efforts in the field of institutional advertising and public relations activities

generally. It is what is commonly referred to as the experimental approach. In the case of magazine advertisements, for example, the objective would be to find out whether the advertisements—or stated more accurately, the ideas and approach represented by the advertisements—could be expected to affect the customers' attitudes toward us. When we speak of attitudes, the measuring stick used is made up of exactly the same batteries of attitude questions used in the trend survey.

These studies have been participated in by many of our operating companies and their advertising agencies. There is nothing basically new in the procedures followed. Let's say we have four advertisements to be tested. People are interviewed in their homes and Customer #1 in the sample is shown Ad #1, asked questions on what he thinks the company is driving at in the ad and why, and then asked to give his answers to the attitude questions which we use in the periodic trend survey. The process is repeated for Customer #2—next door or across the street—using Ad #2; with Customer #3, using Ad #3; and with Customer #4, using Ad #4. Customer #5 answers the questions before seeing any ad at all. The people in this group become the control group.

Usually we get about 600 customers in each group—3,000 total in this particular example. When we compare the answers to each of the attitude questions for each of the ad groups with those for the control group, differences do appear. The size of the difference seems to depend largely on the subject matter of the ad and the method of treatment.

We are very aware that experiments like these have a large element of artificiality and that there are a great many things they do not tell us. We would be the first to admit that the conditions under which the advertisements are read are not normal; that we take the risk that what happens in the test may not happen at all under normal conditions. We don't know whether the effect which appears in the test lasts five minutes or five years. The tests tell us nothing about the cumulative effect of advertising over a period of time.

Nevertheless, the information from these studies is proving useful to our advertising people in planning institutional advertising. First, with respect to the relative effectiveness of different themes, we can advise our advertising people that:

> Talking about the value of telephone service in terms of emergency or specific uses contributes to improved customer attitudes toward the value and cost of service.

Talking about the value of service in broad generalities is usually not very effective.

Talking about service improvements that come out of research makes people think more highly of the value of their telephone.

Explaining our financial problems in advertisements in a way that is the least bit complicated doesn't get us very far in making people think that they get their money's worth out of the telephone.

Talking about the company as a good place to work improves the people's feelings about the company in general.

Talking about the character and courtesy of telephone employees contributes to a favorable attitude toward the company generally.

Many factors other than the theme or the subject matter of the advertisement contribute to its effectiveness. You might be interested in just a few of these that the research indicates are of great importance, particularly with respect to advertisements built around the general idea of the value of telephone service:

Personalization. Quite characteristic of many of the ads that rate high in effect is that they feature people, frequently specific people identified by name. As far as our advertising is concerned, talking in terms of people, in terms of human values, seems to get through to the reader much more effectively than talking about machines.

Reader Benefit. The importance of pointing out to the reader how he benefits from what you are trying to tell him can't be emphasized too strongly.

Identification. Perhaps most important of all, especially when it is combined with the other two, is presenting things in such a way that it is easy for the reader to identify himself with the people you show, or the setting or the situation you portray. Thus, he has a chance to relate his own ideas, his own values, his own wants and needs to what you are trying to tell him.

In addition to this work with printed advertising—it has covered both magazine and newspaper advertisements—we have made

similar measurements for other media. This would include such things as lecture demonstrations, open house visits, TV commercials and Bell System films.

These are some of the principal fields in which research is carried on in order to develop information which might be helpful to our advertising and public relations people. Obviously, we don't have answers to all the questions about how customers feel about us and what we can do to make them understand and like us better. What I have been mainly interested in doing is outlining for you what might be called the strategy of the research approach.

> First, by means of periodic surveys, finding out how people feel about us and what the trends of public attitude toward the business are.
>
> Secondly, by means of various special surveys, studying specific problems in greater depth.
>
> And third, by use of the experimental approach, discovering those things about the business we can tell the public which will be most effective in improving the attitudes measured in the continuing studies.

14

THE USE OF CONSUMER SURVEYS IN DIRECTING ADVERTISING AND SALES PROMOTION ACTIVITIES

J. RUDOLPH GUIDROZ*

New Orleans Public Service, Inc.

MORE and more, management is using facts on which to base marketing decisions. Marketing research supplies these facts about markets and people.

The growing importance of marketing research in modern business activities is indicated by its development in recent years. In this paper I am concerned with one aspect of marketing research—the consumer survey and how it can be utilized to direct advertising and sales promotion activities.

Some case histories will be described and since personal experiences offer the surest footing, I have been asked to describe some of the experiences of my own company. Later, I shall discuss some interesting facts and figures from a special survey of what other utilities are doing in the way of consumer survey activities.

In order to clarify subsequent points in this discussion, let me give you just a few vital statistics. Ours is a combination company serving electric, natural gas and transit customers in the City of New Orleans proper. We do not merchandise major appliances, but promote their sale through an organized sales promotion program based on personal contacts, plus the use of all advertising media. In round figures, we have 173,000 total electric customers and 163,000 total gas customers.

**J. Rudolph Guidroz* became associated with New Orleans Public Service, Inc., in 1932 and has served as Sales Promotion Manager since 1950. After graduating from Tulane University in 1929 with a degree in engineering, he worked with General Electric Company until 1932. Mr. Guidroz is a board member of the New Orleans Chapter of the American Marketing Association, Chairman of the American Gas Association Marketing Research Committee, Director of National Sales Executives Inc., and has been a part time instructor at Tulane University.

Now for some case histories of consumer surveys in action.

MARKET POTENTIAL

Saturation of Appliances

Biannually, a survey of our residential customers is conducted to determine the degree of saturation of major appliances. We have just completed such a survey this year. It was accomplished through personal interview by our Residential Customer Service Representatives with a controlled sampling of two per cent of our residential customers. As a partial check this sample was compared to the total city population in average KWH and MCF consumption, racial composition, and income distribution. These characteristics matched closely. Included in the published survey are data on number of customers, annual income and home ownership.

This appliance saturation is of definite help in pin-pointing the market and showing us where the greatest possibilities for improvement are located. This information is of further value as a sales promotion tool in showing appliance dealers their present sales potential, and the relative proportion of possible new users and replacement sales prospects.

An appliance saturation survey is useful to us in planning, for upon its completion we know how we stand in relation to national and other localities' saturation figures. From it we can determine the appliances which need the most promotion, those which are largely a replacement market, and those in which we are making good headway. The saturation study helps eliminate guesswork in sales program development, and has proven itself one of our handiest research tools.

MEDIA EFFECTIVENESS

Certainly one of the best uses of the consumer survey is in testing the effectiveness of promotional media. Here are two examples:

As a residential bill attachment, we are using a monthly publication called *homemaking*. Consumer readership surveys of this publication have indicated that it is getting excellent readership.

Another test of promotional media involved our weekly television program—*Homemaker's Holiday*. The program is a weekly, afternoon, 30-minute cooking demonstration. Originally, it was

a 15-minute, twice-a-week program with a different format, starring a different TV personality. Two consumer surveys of the viewing audience of the original program indicated that we were not getting as good coverage or customer reaction as desired. As a result of these two surveys, a new type of program was developed. Customer requests are now well above results experienced with the first show.

The foregoing are examples of the type of consumer surveys used by my company on a continuing basis.

The following illustrate some of the special consumer surveys conducted from time to time. All of these surveys were conducted during 1956, and were used in sales planning.

MAIL SURVEYS

Objective: To determine appliance saturation in a less expensive manner than by personal interview, and to check the accuracy of a survey by mail.

Results: Showed that although the mail survey was less expensive, it was not as accurate. Decided to continue biannual personal interview surveys.

SALES CAMPAIGN

Objective: To determine the cost, new revenue and effect of an annual gift bulb campaign.

Results: Indicated that the campaign costs in 1955 were not justified in terms of increased load. As a consequence this activity was changed in 1956 with a good improvement in revenue to cost ratio.

CHANGING MARKETS

New Homes - Single

Objective: To determine whether appliance saturation in newly constructed homes paralleled city-wide saturation and to discover what new trends in appliance usage were developing.

Results: Indicated that saturation of most appliances exceeded city-wide saturation. This was due partly to higher average income levels. Survey disclosed (1) trend toward built-in electric bathroom heaters (2) relatively good acceptance of built-in cooking equipment (3) relatively good acceptance of

color in appliances (4) larger size water heaters (5) better wiring with more circuits.

New Homes - Subdivisions

Objective: To determine the type of cooking equipment used and what appliances were furnished by the builder.

Results: Information secured was used in sales promotion work with builders. Collaterally, appliance saturation in these homes was found to be much higher than city-wide figures on attic fans, automatic washers and water heaters.

New Loads

Objective: To compare load and usage of large single door refrigerators with that of double-door freezer-refrigerators, and to determine the extent of freezer acceptance.

Results: Found revenue of freezer-refrigerator to be higher than previously estimated, thus making desirable the promotion of this appliance. It offered immediate increase in revenue, plus the development of interest in home freezer ownership. Our freezer promotions now include the combination unit.

New Methods

Objective: To survey the market for frozen foods storage and display equipment among food stores and to determine saturation of this equipment.

Results: Showed that saturation of equipment was not as high as believed to be; space for the equipment was a problem; stores wanted to handle more frozen foods. As a consequence new training was designed to help our commercial representatives in promoting frozen foods equipment.

WHERE TO?

Where does the effort expended in consumer survey work lead? In our case, the information gathered by means of consumer surveys is combined with other marketing research data to serve as a guide in preparing an effective sales program. By using consumer surveys and other market research tools, we believe we have an organized plan of action.

So far, we have dealt with the consumer survey efforts of one company. Now let's take a look at what some of the other companies, perhaps your own, are doing.

When the data were being assembled for this discussion, it seemed that the best method of gathering accurate information on the consumer survey activities of other companies was to go directly to the source. So a simple questionnaire was designed and sent to the "four corners of the country."

The cooperation and interest demonstrated were most gratifying. We received a 95 per cent return from the 75 companies surveyed, and this response was evenly distributed throughout the nation. The responding companies serve over 20 million electric and 14 million gas customers.

Table I shows the tabulation on this "survey about surveys."

The results of the survey revealed a high interest in market research and consumer surveys. Although various types of surveys were conducted, appliance saturation and opinion or customer relations surveys were predominant. The majority of the companies are doing some kind of market research work even though the organization does not include a formal market research group. This certainly indicates an expanding use of market research in the future. A majority of the companies making use of consumer surveys use the results obtained in determining advertising, sales promotion and sales activities. And what is perhaps more important, better than half of these companies plan to continue their research operations.

While this tabulation is most revealing, the discussion would not be complete if we did not briefly cover the follow-through action some of these companies have taken.

Here in rapid-fire order are some actual excerpts from the replies received.

"We were able to determine the public attitude toward our company. We have taken steps to work closer with certain dealers and to do considerable revamping of our service department."

"Consumer surveys were the foundation of our 'Target Program.' This program set our goal for each of the next five years."

"Consumer survey data have been used to conduct special campaigns directed to low use customer classifications."

"We changed our advertising to include the cost of operation slant."

"Survey findings were used as a guide in planning heating sales activities and the nature of sales contacts with new building

TABLE I

Number of questionnaires		75	
Number of replies		71	
% return		94.7%	
		Electric	Gas
Number of Customers			
All electric companies		12,226,704	—
All gas companies		—	9,782,577
Combination companies		8,112,641	4,426,926
Total		20,339,345	14,209,503
		No.	% of Return
Have a Market Research Group	Yes	20	28.2
	No	47	66.2
	Other	4	5.6
Conduct consumer surveys	Yes	57	80.3
	No	14	19.7
		No.	% of No. Conducting
Conducted by:			
Company personnel		20	35.1
Outside personnel		15	26.3
Both		22	38.6
Types of consumer surveys conducted*			
Appliance saturation		36	63.2
Opinion—customer relations		22	38.6
Usage—or load studies		7	12.3
Media—readership		6	10.5
Motivation		3	5.3
Miscellaneous		13	22.8
		No.	% of Return
Experience with motivation research	Yes	12	16.9
	No	59	83.1
		No.	% of No. Conducting
Consumer surveys used in planning			
Advertising		44	77.2
Sales Promotion		46	80.7
Sales Activities		44	77.2

TABLE I (continued)

	No.	% of Return
Plans for future consumer surveys		
Have plans	38	53.5
Have no plans	19	26.8
Undecided	14	19.7
Types of consumer surveys planned*		
Appliance saturation	20	28.2
Surveys planned—type indefinite	14	19.7
Opinion—customer relations	8	11.3
Motivation	3	4.2
New Construction	3	4.2
Direct mail—readership	3	4.2
Miscellaneous	6	8.5

*Some companies reported more than one type of survey.

market. In the commercial market, the findings were used to pinpoint heating prospects, large cooking and water heating prospects."

"Consumer surveys were used to determine. . .the number of each type of equipment on our lines; the number of each type in use per hour, and the peak hours."

"Consumer surveys determined the sequence in which the customer purchased various appliances."

"We found that the number of X dryers in use outnumbered Y dryers five to four, and this despite the fact the customers preferred Y dryers three to two. Sales emphasis was shifted to promote Y dryers and a later survey showed Y dryers outnumbered X dryers five to four, and are currently outselling X dryers two to one."

"We plan to set up a test city or test area to help evaluate promotional plans."

"A survey revealed that about 65 per cent of our X range users preferred one particular feature of this type of range. We have since made extensive use of this feature in our advertising."

"Appliance saturation figures from consumer surveys were used to determine or back-up slogans."

"As a result of the survey, we have increased our dealer cooperation program and enlarged our dealer contact staff. At the same time, our institutional advertising has been slanted stronger toward dealers."

"We determined the degree of satisfaction or dissatisfaction with a certain piece of equipment. Sales training, designed to help answer objections, was then developed."

"This information (testimonials) has been useful in newspaper and television advertising."

"By simply comparing the results of the two surveys, we can arrive at the changes which take place in public awareness of the basic points stressed in our advertising."

"The study showed that there was a definite trend based upon KWH use before the purchase was made. From this analysis, a direct mail program was instituted and proved very successful by being directed to all customers in the same category."

"Steps have been taken to follow-up on users who indicated difficulties in the survey."

"Based upon results of the territory survey, we plan to employ specialists on an incentive basis."

And, finally. . .

Mr. C. T. Smith of the American Telephone & Telegraph Company conducted a recent nationwide study of the residence market for long distance service. He ascertained the characteristics of users, nature of use, etc. This information has been useful in developing specific long distance advertising, promotional and sales activities.

CONSUMER SURVEYS PAY

The case histories we have discussed indicate how such work constitutes one of the major elements in market development. Without it management could find itself guessing at some facts that could be substantiated and confirmed. By taking advantage of modern research techniques, management can better chart the best course in reaching desired markets.

We in the utility industry, because of sizeable investments in plant and equipment, must of necessity regard consumer surveys as an important tool in the development of management decisions. To be successful our consumer survey activities should be flexible and free enough to be completely objective.

END RESULTS - SALES

Our research should take into consideration all factors that in any way have a bearing on the whole problem if we are to chart successfully progress toward increased revenues from the greater use of the services we sell. And we should never lose sight of

the fact that our business is selling—selling based on benefits to our customers—benefits that can only be realized through knowledge of our markets.

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SALES AND MARKETING PLANNING OF THE EDSEL

HENRY G. BAKER*

Ford Motor Company

WHY THE EDSEL?

MARKET Research studies by our company on the Edsel automobile have covered a period of almost 10 years. These studies concerned owner likes and dislikes, product identification and "imagery"—the pictures in people's minds of the kind of car they would like, the reason for the Edsel, and many Market and Sales Analysis studies. As professional marketers are quite aware, we are using "imagery" in the automobile business today. We have found that cars have definite personalities of their own and that a man buys a car which he believes best exemplifies his own personality.

This made it somewhat easier for us to plan our product, as well as our Advertising and Sales Promotion, because if we could first establish a share of mind with the car-buying public, then we could more readily establish a share of market for the Edsel line.

For some years there has been a growing trend toward cars in the medium-price class. Where once the traditional makes in this field—Buick, Dodge, Mercury, and so on—were about one-fifth of industry sales, they now account for one-third of all sales. And so great has been the demand for more luxurious cars that even the so-called "low-price" makes have entered this market with

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**Henry G. Baker* became Sales Planning and Programming Manager of Edsel Division, Ford Motor Company, in 1955. Previously he had been on the faculty of several universities as Professor of Marketing and Director of the Bureau of Business Research. In addition, he had been a Sales and Marketing Consultant. Mr. Baker is a graduate of Western Kentucky State College and the University of Kentucky. He holds an EdD degree from the University of Cincinnati, and is the author of three books.

models that, in price, overlap the bottom level of the medium-price class. Today, about 60 per cent of all cars sold are in this price range.

One reason for the growth of this market, of course, has been the tremendous rise in consumer income since World War II. Not only has disposable personal income (in 1956 dollars) increased from about $138 billion in 1939 to $287 billion in 1956, but the per cent of this income spent for automobiles has increased from around 3.5 per cent to 5.5 - 6.0 per cent today. And forecasts for the years ahead show that disposable income will go even higher—to just short of $400 billion in 1965.

Clearly, the economic climate favors a continued trend to medium-price cars. General Motors has three makes—Pontiac, Oldsmobile, and Buick—in the medium-price class (which together almost equal the penetration of Chevrolet). Chrysler has two makes in the medium-price field (Dodge and Desoto). But Ford Motor Company has only Mercury, which is responsible for less than 20 per cent of the company's current business.

Let's look for a moment at the relatively common behavior of trading up one step from a low-price car to a medium-price car. Each year approximately one out of five traders of a low-price car buys up to the medium-price range. As Chevrolet traders buy up—and have three GM medium-price makes from which to choose—87 per cent stay with GM. As Plymouth traders buy up—and have two Chrysler products from which to choose—47 per cent stay with Chrysler Corporation. But as Ford traders buy up—and have but one Ford Motor Company product available to them—only 26 per cent stay with Ford Motor Company. Most go to GM's three medium-price makes. And in total volume, we can estimate quickly that Ford uptraders contribute almost as much to GM's medium-price penetration as GM, through Chevrolet, is able to generate for itself. This has been one of the greatest philanthropies of modern business.

In search of the kind of a new make to develop, research studies also took us to the consumer's mind, where we sought to find the optimum imagery point on several scales. One, a young to old, another a masculine to feminine, and a third, workingman to well-to-do. We asked consumers, which makes do you think a younger person might buy, an older person, and so on? On the basis of these interviews, we planned our car to follow the personalities of those makes more centrally located between the extremes of these three scales.

A make of car is a badge that people can buy and wear, and show the world that they are the kind of people that they think they

are. A make thus becomes a very real extension of the owner's DESIRED personality, and something he derives gratification from, if the personality fits.

We also researched such product images as workmanship, speed, trade-in value, and appearance, to rank them in importance. And, again, we explored social imagery by asking large numbers of consumers what car they thought of as being owned by a doctor, lawyer, dance-band leader, community leader, etc.

Our stylists have made every effort to style a car with a personality that fits a wide segment of the market, and both social and product imagery were given deep consideration.

As a result of our research, Advertising and Promotion will push Edsel as "The smart car for the young executive or professional family on its way up." It will say to the young man: "Edsel has faith in you, son." To attract families, it "Will not be exclusively masculine," but "Will seek a wholesome 'good' role." We will offer "Successful status to Ford owners who are trading up."

Edsel will attempt to exploit two rather dependable tendencies of auto buyers: To trade up, and to stick to the same family of cars.

It was determined that Edsel styling would be distinctive from any angle—front, rear, or side. General Sales and Marketing Manager, J. C. "Larry" Doyle, urged that the same fresh approach to Sales and Marketing Techniques and Programs be taken.

EDSEL STYLING

Edsel styling began in 1954, when a team of designers under Edsel's Styling Manager, Roy Brown, anticipated a go-ahead on the "E-Car" and started making up sketches. Studying existing cars, the stylists found it difficult to distinguish makes at a distance of a city block. They even scanned cartops from the roof of a ten-story building overlooking a parking lot to see what distinguishing features might help make the Edsel stand out from the back. Edsel stylists were asked to be both distinctive and discreet, which were, in a sense, paradoxical objectives. It's easy to be distinctive OR discreet, but not distinctive and discreet at the same time.

Since Edsel's Consumer Research could give only a general idea of the styling principles car buyers prefer, the actual features and form of the car had to be developed in a stylist's ivory tower. Stylist groups attacked various "Themes," boiled down hundreds of sketches to two dozen "Comprehensives" to show top management. Then, they boiled the "Comprehensives" down again to ten

sketches, and finally started on clay or plaster mock-ups to judge three-dimensional high lights and flair. The final concept as it looked in plaster was satisfying to every designer in the company, and when you get 800 stylists under one roof to agree that they like a creation, you have unusually high agreement.

Edsel styling was "locked up" in August, 1955, except for minor alterations. By January 1956, Edsel was committed on its special tooling orders for the '58s, was ordering engines, transmissions, and other major items from other company divisions, and was arranging plant facilities to accommodate production. Last winter, orders for trim cloth, interior hardware, and other miscellany were placed. Although the first 1958 Edsel won't roll off the production line until July 15, our management is already neck-deep in the job of "Phasing In" the 1959 and 1960 models.

The new Edsel line will feature 18 models in four series—a complete line of automobiles—Ranger, Pacer, Corsair, Citation. Our price range will be about like this: The Ranger series will be priced competitively with the lowest medium-priced car you can buy, and our other three series will cover the medium-priced car segment.

Ford Motor Company has invested $250 million in the Edsel before a single car has rolled off the production lines—a major venture by any calculation, in a relatively unpredictable market. However, both the men in the company and in the division have matched the size of this risk with massive effort, in an attempt to reduce the margin of error in advance. We have studied and rehashed some 4,000 separate decisions, from the pros and cons of hubcap styling to the basic question—why build an Edsel at all?

Prototype cars have been under test since October 1, 1955, and more than 1,250,000 miles of testing have been completed. Road tests have been made including mountain, city traffic, and desert driving in Arizona—the gamut of tests conceived long before to find a car's weaknesses and get the "bugs" out. Pilot-production cars were built at Mahwah, New Jersey, during April to prove out production parts, and the results were good.

Actually, we have to figure out about two years in advance what people will want in cars. Mistakes in the auto industry are all big and must be lived with a long time.

PUBLIC RELATIONS' BUILD-UP OF THE CAR

It's not by accident that people are asking questions about the newest of new cars. Rumors of the possibility of a new Ford

product circulated a number of years ago. Stories of the organization of a Special Products Division were released to the press not long thereafter.

"It's a car, not a home appliance," said the whispers that went the rounds in due course. There was plenty of speculation in the automotive columns.

Then came the announcement about the Edsel Division, and rumors in the automotive and daily press about what kind of automobile the "E-Car" would be, and what place it would take in the industry's price classes.

Releases to newspapers and radio stations, speeches by company executives, press conferences by Ford and Edsel officials served two purposes—first, to make public certain news and, second, to encourage speculation by automotive writers and commentators.

This definite pattern has emerged—step by step—one subject after another, a definite concept of the new Edsel line has been established. It has been built in a gradual crescendo of interest-arousing releases. . .indirect or direct, casual or formal. . . each more informative, and each building on those preceding. And the crescendo will grow as E-Day approaches.

Mr. C. Gayle Warnock, Edsel Public Relations Manager, keeps as a constant objective the benefits that will accrue to Edsel Division and its dealers from every news story that sees print, every telecast and broadcast that hits the air, every speech that an Edsel executive makes to a public eager to be "In the know."

MARKETING ORGANIZATION

Our General Sales and Marketing Office is headed by Mr. J. C. "Larry" Doyle. Advertising, Sales Promotion, and Sales Training are directed by Assistant General Sales Manager, R. F. G. Copeland, and Marketing is directed by Assistant General Sales Manager, N. K. Vanderzee. We have a field force of five regional and 24 district offices.

While our Market Research Department is part of our Merchandising and Product Planning Office, the Planning and Programming Department, which I administer, reports to the Assistant General Sales Manager—Marketing, and directs the field forecasting system, plans sales, reports sales, develops sales performance analysis, and engages in sales research and market analysis.

SALES AND MARKETING OBJECTIVES

Edsels will be produced in six Ford Motor Company Plants at Mahwah, New Jersey; Sommerville, Massachusetts; Wayne, Michigan; Louisville, Kentucky, and San Jose and Los Angeles, California.

Our company Board Chairman, Mr. Ernest Breech, put our 1958 goal at 3.3 per cent to 3.5 per cent of the auto market. In a six-million car year, this would amount to roughly 200,000 cars. But our General Manager, Mr. Richard Krafve, pointed out that this was a very conservative estimate used for financial control. Actually, all of us in the General Sales and Marketing Office expect to do much better than this.

Since announcing that we would sell our cars through a separate dealer organization, 4,619 inquiries for dealer franchises in every part of the U.S. had been submitted by May 31.

To select our dealers, we made a detailed study of all U.S. Marketing Areas, from major cities to rural counties, carried down to such questions as the proper side of the street for an auto agency in a given town. We plan to have between 1,200 and 1,500 dealers in business when Edsel goes on the market, the bulk of them handling only Edsel (dual dealerships will be restricted to small towns). By 1960, we hope to expand the sales organization to 3,000 dealers, adding a full 25 per cent to the over-all Ford Motor Company dealer network.

While we have little chance of recovering our two-and-a-half-year backlog of development costs in 1958, we do expect to make an operating profit, and count on having the whole project in the black after the third year of production.

We have reasons to believe that the mood for consumer buying will be good at the time of our introduction. Buyers will have had three years to pay off the installment debt they used to finance their '55 automobile buying spree. More important, with consumer income and capital spending at record highs, the general economic outlook is more optimistic than it has been in months.

Where styling and zipped-up engines give auto makers their sales horsepower, it is the fundamental factors that give the market its "Torque."

SELECTION OF FOOTE, CONE & BELDING AS ADVERTISING AGENCY

One of our first problems was advertising. The car would have to have its brand personality created almost overnight. On

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the face of it, the search for an agency might seem simple. Ordinarily, an account of this size would go to one of the largest agencies: it would go, furthermore, to one that did not have a competitive account. Among the top ten agencies in billings, only two were without automobile clients: Foote, Cone & Belding and Leo Burnett. Of these two, only Foote, Cone & Belding had a network of branch offices, a system nearly all of the other agencies which handle automobile accounts have found necessary to manage the regional dealer advertising.

But we did not jump at the obvious. We have, from the beginning of the division, been determined to be objective about everything, and instead of simply appointing Foote, Cone & Belding, we embarked on what became—according to Fortune Magazine—the most exhaustive examination of advertising agencies ever made by an advertiser.

General Sales and Marketing Manager Doyle, began the search in July, 1955, by polling Ford's present advertising agencies, J. Walter Thompson, Young & Rubicam, and Kenyon & Eckhardt, for their recommendations. He also asked Ford Motor Company advertising people to talk to their friends in the agencies. From the various recommendations, a list of eleven agencies was drawn up. Presentations were made by these eleven, and also by twelve other agencies which asked to be heard.

What really concerned Messrs. Doyle and Krafve was a good deal more elusive than organizational charts. They were looking for a "mature" agency. To them, this did not mean an "old" agency, but one with a healthy working climate, a good second echelon of management, widespread stock ownership, and stable clientele.

On February 7, 1956, Foote, Cone & Belding was selected as our advertising agency. Then FC&B found itself embarked on a large opportunity, but holding a big bag. In the nineteen months between getting the account and getting billings on it, the agency may go $1,000,000 in the red on its relationship with Ford Motor Company. President Cone of FC&B merely says that "we figure to invest between $700,000 and $1,200,000."

FC&B and Edsel believe that their marriage will last longer than the industry average of fourteen years. One factor in FC&B's favor, Cone thinks, is that "We know the importance of the dealer, especially on high-ticket items." Others include this agency's strong position in personnel and its chain of offices across the country.

Advertising does not build the car, but it does build the image and the desire. And while the FC&B people don't "prove" the car, they intend to prove the advertising.

ADVERTISING PLANS

Consumers will get their first taste of Edsel advertising this July. And a taste is all it will be, as we continue what we hope, and believe, is a well-planned campaign to whet the public's appetite for our new entry in the highly competitive automotive field.

Initial "pre-announcement" ads will run in magazines. In black and white spreads, they will tell about the Edsel—but only photographs of covered cars will appear. It will be late in August before pictures will be released. The magazine campaign will initiate a four-media drive—magazines, newspapers, broadcast and outdoor. This will also mark the start of a year-long "introductory" drive for the new automobile line.

We cannot release any figures on how much we plan to spend to launch the car, nor can we discuss what it will take to keep "introducing" it all through 1958. However, tentative percentage breakdowns for kick-off expenditures in various media are as follows:

Newspapers, 40 per cent—Although we plan to take full promotional advantage of our "newness" to experiment with advertising innovations, we are not breaking with the traditional emphasis on newspaper advertising that is characteristic of the auto industry.

Magazines, 20 per cent—We started our trade publication advertising on April 29 with a two-color spread in Automotive News. This is a dealer recruitment campaign and will continue in Automotive News and seven other automotive trade publications. Consumer Magazine ad plans call for a "teaser" campaign starting in July, to be followed by ads illustrating the car after its unveiling late in August.

Broadcast, 20 per cent—At this moment, while Edsel has not signed to sponsor any network TV or radio shows, serious negotiations are well under way.

Outdoor, 10 per cent—Outdoor advertising will play a particularly important part during the launching, for the very simple reason that we have no car population or any "loyal owner image" established to help portray even a mental picture of the product. Outdoor advertising will be used to figuratively put the Edsel on the roads and highways of America.

Miscellaneous, 10 per cent—We know how much we have budgeted for the amount of advertising and promotion we will be doing

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between the time we bring out our car this fall up to January 1, 1958, and we have a tentative budget for what we think is necessary to do a top-drawer job from January 1, 1958, through the end of the model year.

We expect the task of "launching" our new car to be a two-year venture, and know that its per-car advertising costs will be competitive with other cars in our price ranges.

There is an important difference between the introduction of a new car and that of a new model of an established line by an automobile manufacturer. Ordinarily, the introductory phase of a new model automobile lasts from 60 to 90 days, when a switch into more of a holding or consolidating position is made. This will not be the case with us, for our first car, the introductory period will be the full model year.

The Edsel offers both a challenge and a unique opportunity to do a real dealer education job. For the first time in nearly 20 years, dealers will be offered something really new—a new car instead of just a new model. We at Edsel plan to take advantage of this opportunity by stressing to our dealers that they have this added increment of "newness" to sell.

There is no such thing as consumer sampling, with prototypes at about $100,000 apiece. In addition security makes it impossible, or not logical, for us to expose our product.

Also, it is not possible for us to make copy tests without exposing our hand, and it is not possible for us to do test marketing. And when we introduce, we are going to have to introduce at one time all over the country. Now, we must overcome all these handicaps and do it on a realistic budget. We are not planning on out-gate-folding, or out-shouting anybody. We intend to spend enough to properly introduce this new car, but we are not going to get tangled up in a competitive spending spree.

PROFIT-CENTERED DEALERSHIPS

Edsel's realistic new marketing concept puts every dealership department on the sales and profit team. In addition to a new kind of car, the Edsel Division introduces a new marketing concept to automobile retailing. Based upon the "costing" know-how of today's well-managed business organizations, this advanced plan for management treats every dealership department as a source of sales and, therefore, profits. Each of four basic operations of the dealership—new car sales, used car sales, service, parts and accessories—is a "profit center."

Through his management, the dealer provides the training, the leadership, and the incentives to develop every sale, in every

department, into a chain-reaction of further sales. Dealers have the advantage of new personnel, an impressive new product, and new opportunities to establish this profit-building concept at the start. In this sense, the dealer's office is the fifth "profit center" and the most important of all.

NEW CAR PROFIT CENTER

The first step in moving the customer along to the point of signing an order is the dealership's outside appearance. It will be transformed quickly, and at low cost, with special Edsel colors and signs. This new facade immediately identifies the dealer's place of business with Edsel's national and local advertising.

The value of "family resemblance" identification is well known in all retail lines. Once the public has identified an Edsel dealer—the man who sells a product which the public has come to know and like through publicity and advertising—he is well on his way in doing business with brand-name merchandise.

Promotion within the dealer's selling organization, as well as to the public, is provided by an Edsel Division budget aimed at getting dealers off to a flying start. Part of this program is an idea-group for salesmen's incentives and contests. Training for salesmen and sales managers is offered to help build up sales quickly. The Division is also planning an Edsel Salesmen's Club to stimulate rivalry and grant recognition to the men who produce sales.

As a basic working tool of all dealer profit centers, the Edsel Division will publish and send to dealers a marketing magazine. In this publication, "Your Edsel Marketer," dealers will find a national interchange of management ideas—field-tested answers to many common merchandising or operating needs.

USED CARS PROFIT CENTER

In the United States, the used-car business is a little known giant of retail trade. If new car sales total $15 billion in a typical year, used-car sales match them dollar for dollar. An Edsel dealer has this $15 billion market at his doorstep as an immediate source of income and profit. Edsel has made it a first order of business to give its dealers a major competitive advantage in used-car trading. Through a nationwide promotion under the general name of "Green Light," our dealers' connection with Edsel gives their used-car lots quick identity as places where prospective buyers can trade with confidence. In merchandising

"Green Light" cars, a dealer will not sell used cars—he'll merchandise unused mileage or usable transportation.

The element of public confidence is universally recognized as the key to profitable used-car merchandising. There are about 35,000 independent used-car dealers in the United States, some of them large profit-producers. In practically every case, success has been based upon a firm name or slogan suggesting confidence, built up over a period of years at considerable effort and advertising expense. The Edsel "Green Light" for used cars gives our dealers this merchandising fundamental on the day they open for business.

The Edsel dealer immediately sets up a used-car operation that not only banks quick profits, but supports all future new car sales. Three out of four new cars sold today involve trades. In the 6 to 7 million-car year now considered typical, about 4.5 million are replacements for the scrappage which occurs at the low end of the car-life scale. The constant trading of still-good cars between one and eight years old is the ultimate source of the franchised dealer's retained new car profits. The successful used-car merchandiser *increases* his net profit by intelligent handling of the trades.

SERVICE PROFIT CENTER

Service makes immediate money—and our dealer's best outlook for new car prospects is through a busy shop door. On the day he hangs up his "E," the newly franchised Edsel dealer is in a revenue-producing business of servicing of all makes of cars. The Edsel dealer enjoys unusual advantages in order to profit quickly from his service shop because:

Good automotive service is at a premium in practically every community today—a "shortage" market ripe for cultivation.

Other-make dealers, overwhelmed by car population outgrowing their facilities, cannot take advantage of existing conditions—while the Edsel dealer can.

A reputation for good service means a customer following, a prospect list for new cars, the best possible "booster" advertising for prospects. The Edsel dealer can build service reputation at a profit.

We at Edsel have made dealer service development our No. 1 objective of our program to aid dealers.

The Service Department of Edsel Division operates on the principle that service can make profits—which to many in the automobile business comes as a refreshing and new idea. Certain accounting theories, such as "service absorption" of entire dealership overhead, have led some dealers to conclude that their shops were not profitable. But in actual dollars, the typical well-managed service shop makes a 30 per cent gross profit.

The Edsel Division is ready with dealer-tested plans to help dealers attain immediate shop efficiency and a customer following. We believe that our "Green Light" service program of cooperating with dealers in service development is far more extensive, realistic, and closely geared to dealer needs than any ever offered by a manufacturer.

The attention the Edsel Division gives to facilities planning is also a new look at an old industry practice. By starting with the right facilities, Edsel dealers not only operate with immediate efficiency, but they make sure of retaining their service following through future expansion.

We make it possible for each of our dealers in the United States to give his mechanics thorough training. Their skill and efficiency are essential to build the dealership service reputation and thereby their ability to develop new car sales. The service manager is guided to manage men, money and machines in order to promote new business.

PARTS AND ACCESSORIES PROFIT CENTER

Although the market for Edsel parts will necessarily mature with the growth of the Edsel car population, the dealer can foresee his parts department becoming a major profit center and plan to take advantage of it. He can also earn immediate income from sales of standard or other-make parts for the shop, and especially from the sale of new car accessories. The Edsel dealer can order parts for all Ford family lines of cars direct from the nationwide system of Ford warehouses. They are located strategically to provide fast delivery to all areas via existing means of transportation. A well-charted course toward parts and accessories penetration gives the Edsel dealer still another opportunity to realize the maximum profit-dollar from his initial dealership investment.

HELPING THE DEALER TO DEAL

Under the Edsel concept of management, the dealer himself is a kind of "profit center." He makes the decisions and supplies

the capital and the leadership by which each income-producing department will function. So the Edsel Division has created a special department to give the dealer every benefit of company management know-how—a consulting service that is a "first" in the automobile industry. Called Management Services, this department has an experienced management consultant in every district office, available to dealers at no cost. It also has developed modern accounting aids that clarify and simplify dealers' tasks of keeping abreast of events. And it has streamlined the work of the Edsel zone sales managers who contact dealers.

Selling cars in volume is one thing, knowing one's cost of doing business is another. Edsel Division's new, simplified financial statement is an improved management tool to help the dealer accomplish both objectives. It provides an easy-to-read summary of business results by month and year-to-date, in such a way that dealers can quickly analyze their present operating positions and plan ahead with confidence. That proven guide to efficient procedures—the daily operating control—is now so arranged that it matches the accounting line-ups on the financial statement. Dealers get a coordinated set of progress signals.

At the district level, the duties of the zone manager, dealers' principal company contact, has been given new status and importance. He will be well trained to give dealers effective assistance in a multitude of ways. Back at the district office, the zone manager's assignments will be carefully screened and organized to eliminate duplication of effort and waste of time.

Sales and profit programs will be directed by one man. His title: Management Services Manager. In this new set-up, the Management Services Manager will supervise all the functions of Business Management, Sales Planning, Training and Sales Promotion of new cars, used cars, parts and service. He will be supported by Management Specialists and Analysts. In a very real sense, the responsibilities of the Management Services Manager parallel those of a Dealership General Manager. He's versed in both management and promotion—that is, in the profit twins of "more gross, less expense."

The division supplies skilled assistance to dealers because Edsel recognizes the fact that dealers' profits and Edsel's success are built precisely on the same foundation.

DEALER APPOINTMENTS

One of the most intensive market research programs in history was undertaken by Edsel to learn where to place each Edsel dealer

in the nation's 60 major metropolitan areas. It consists of a series of maps and overlays, locating the major population centers, the various income groups, competitive dealers and a vast assortment of other information. We expect that this data will enable us to take advantage of the latest population shifts and trends and to have the best located dealer body in the industry. The chore now in progress is that of matching the planned dealer points with the 4,600 inquiries for the Edsel franchises.

We are not seeking to run anybody else out of business and we are not out to "shrink the economic pie" in any town, city, or state. Just the opposite. Instead of taking business away from somebody—we are out to make more business in our industry and in all the communities where we will have good businessmen for dealers.

One of the things we have done is to clarify the situation as to where we will dual. Generally, the policy will call for exclusive Edsel dealerships, with only 10-15 per cent of the dealerships in the "first wave" being dualed. The first wave of dealerships are the 1,200-1,500 dealers in the major cities and counties who must be signed by introduction day. It is expected that this wave will include about 50 per cent of the division's outlets, which will sell about 80 per cent of the volume. Progressively, over a period of several years, a "second wave" of dealerships consisting of 1,200-1,500 outlets in the smaller volume markets will be recruited.

In accepting or rejecting the various dealer applications for franchises we look for these important factors:

The applicant's proposed plan, organization, and thinking about how he is going to sell and service Edsel cars. Contrary to all the things you hear and read, the factories do not want to tell a dealer how to run his business. We cannot do this because there are too many variables. We want the dealer to tell us how he is going to do it. We do have guides to help him.

His reputation as a man of character.

Adequate finances.

Adequate facilities.

Demonstrated management ability.

The ability to attract and direct good people.

Sales ability.

Proved management ability.

A proper attitude toward ethical and competitive things.

Whether the applicant thinks in terms of being a good citizen.

Whether he is the type of man who will give proper consideration to his customers in sales and service.

Financial guides have been developed to determine the amount of capital needed for a certain number of car sales per year, but we are more concerned with the prospect's ideas of how much money he will require to do the job. If he has been successful before, he should know the requirements. Some men can operate with less capital than others. We are not interested in superfluous spending on bricks and mortar—but a dealer should give us adequate representation in his building, equipment and parts. A big, expensive showroom is not a requirement. We would rather see floor space devoted to pay space.

We have estimated that the mean dealer will invest between $75,000 and $125,000 in an franchise, and that he should do a mean annual volume of between $1,500,000 and $2,000,000. The automotive retail business brings a return that is generally higher than most retail businesses. Ordinarily, a dealer might invest at least $20,000 working capital, plus buildings and facilities for a 50-car franchise, but our whole philosophy in working with dealers is that each individual dealer establishes his own sales goals and his own investment requirements.

We are looking for quality dealers—men of good reputation in their communities—men of integrity. A good slogan might be—"Quality Dealers For Customer Confidence."

We want to remember "The Forgotten Man"—the customer—and start giving him the attention he deserves, because no business is any better than the customers it serves.

Edsel applicants will get the same treatment from the Ford Dealer Development Department, the agency that helps finance new dealerships, as any other Ford Motor Company division applicant.

SALES AND MARKETING JOB AHEAD IS BIG

An even richer and more brilliant tomorrow for the American economy seems just about as inevitable as anything reasonably can be. If this were not so, Ford Motor Company would scarcely have laid $250 million on the line for the new Edsel, nor would it have received 4,600 inquires for Edsel franchises at a time when some people say there isn't any money to be made in the automobile business.

Ford Motor Company is near the completion of a 10-year capital investment program which involved $2.7 billion for new plants

and equipment and plant modernization. The peak of Ford's post-war expansion is the 1956-57 period.

Most of us will agree that we have had a tremendous decade behind us, and there's every sign that another, even more tremendous decade lies ahead. The magnitude of the job to be done in changing consumer habits as well as the great opportunity for expanding sales in nearly every field of production and services suggests the need for raising our sights in the whole sales and marketing area.

Competition will be intensified by the rapid growth of advertising, sales, and marketing influence. The amount of total advertising influence directed to the U.S. consumers in order to change their habits and ideas of living has gone from approximately $2 billion in 1940 to the neighborhood of $10 billion in 1956. That's five times as much.

Just to keep up with our expanding productivity, which may make possible $600 billion of production by 1967, will require an expansion of $134 billion ($266 in 1956—$400 billion in 1967), or more than 50 per cent in sales of goods and services to consumers—an almost revolutionary change in living standards and concepts of the mass of our people. In other words, we must accomplish in the next ten years as much improvement in our total living standards as we accomplished in the 200 years from colonial times to 1939.

In this new environment and new pattern of life, advertising, sales and marketing will have the job of accelerating increased consumption and increased efficiency and productivity in our whole economy.

When we see our population doubling and, perhaps, redoubling in a single century, when we see the standard of living rising all over the world, when we contemplate the enormous drain on our natural resources in the coming century, when we witness man's first faltering steps in an atomic age, when we watch him seeking to penetrate outer space, when we see him trying to harness the rays of the sun, when we observe his determination to unlock, if he can, the ultimate secrets of the universe—such as the creation of matter out of energy—and when we comprehend, in short, the boundlessness and vastness of his expectations, we do know one thing: that the future is not for little men with little minds. It is not for men without vision who fear progress. It is not for timid men. The future is for men who dare to have great expectations, and who—with the guidance and encouragement of all the people for whom they strive—will also have the courage, the persistence, the wisdom and the patience to transform those expectations into realities.

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We at Edsel hope to become an important segment of this new sales and marketing expansion that promises a higher material standard of living to all of our people. We also hope that we learn to use this greater material wealth in a wholesome way.

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COORDINATING ACTIVITIES OF INDUSTRIAL SALESMEN WITH THE AVAILABLE BUSINESS

CHARLES ROBERT BROWN*

General Electric Company

SALES POTENTIALS VS AVAILABLE BUSINESS

MR. Webster says that "potential" means "existing in possibility not in actuality; possible or in the making, as opposed to actual or realized; latent; as, a potential hero or market."

So just as the potential hero is unlikely to receive a medal, the salesman is unlikely to obtain an order from a potential market.

A cigar manufacturer for years said in his advertising that spit was a nasty word. In my opinion, potential is a nasty word too, the way it usually is loosely used without any real definition.

We use the term "available" defined as to a time period such as the year 1957, and also defined as to product and market scope, etc. When the year 1957 is completed, someone will actually have obtained the orders for the business that was available in 1957—it is a measurable quantity.

On the other hand, "potentials" usually are loosely used terms for denoting either the available business, or some undefined amount of business possible of being obtained sometime in the future. In its undefined stage, it usually is the defined available business plus an additional amount of similar business that might have been or might be obtained if certain things were done to change the existing conditions under which the available was determined.

**Charles Robert Brown* is Manager of Marketing Research, Apparatus Sales Division, General Electric Company. He has been with GE since graduating as an electrical engineer from The Johns Hopkins University in 1925. About half of his experience has been in engineering, sales promotion, and commercial work and the other half in marketing research. He is Chairman of the Advisory Council of Marketing Research Directors of the National Industrial Conference Board and a Director of the American Marketing Association.

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We in the American Marketing Association pride ourselves on our abilities to define and measure, and do many other things that careless people do not do. However, we blissfully use "potentials" to mean almost anything, and in my humble opinion, it is time we stopped our careless practices in this regard.

This is the end of the sermon and I shall now proceed to talk about problems of salesmen and available business properly defined.

THE KIND OF BUSINESS WE ARE TALKING ABOUT

First, to make certain that we all have a common understanding of the kind of business we are talking about, let me say that it is Producers' Durable Goods or Capital Goods Business.

Also to keep our thinking straight, let's remember what a picture of this kind of business looks like over a period of years, especially from an order standpoint. Figure 1 covers all kinds of Producers' Durables, except automobile and farm items. As you well know, such products as electrical machinery, other machinery, and transportation equipment are included.

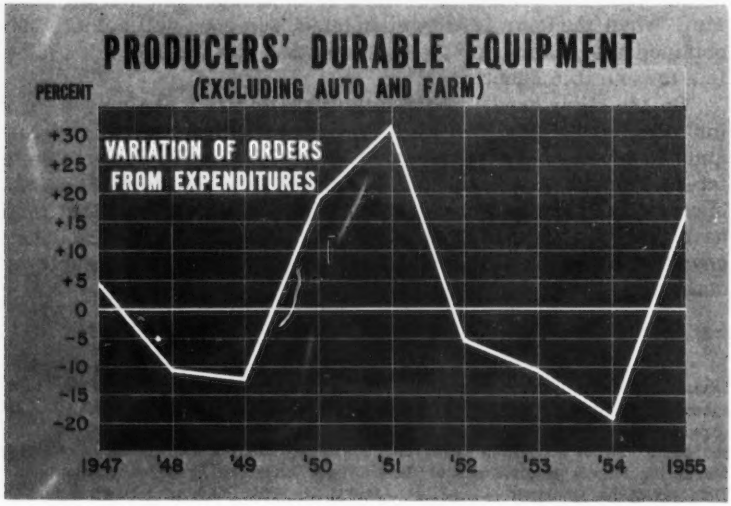

Figure 1

The expenditures for these Producers' Durables are shown as the base line and approximates production. The variation in the level of orders and the level of production is shown year by year. In some years, orders in total have been over 30 per cent higher than production levels and in other years as much as 20 per cent lower.

While this is the over-all picture, we must remember that many of the items which are included in these totals have much greater variations than those shown here. In our own Producer Goods business, we have much more violent swings than are shown here.

I wish to call particular attention to the year-by-year fluctuations in the levels of orders that are placed for these items. Since one of the principal jobs of a salesman in this field is to obtain these orders, these rather violent year-to-year fluctuations in order levels must be kept in mind during our discussion.

In the Apparatus Sales Division of General Electric, the products we sell are a part of this producer goods business and include such items as motors, switchgear, transformers, steam turbines, industrial control instruments, and many, many others. Such products are purchased by all kinds of manufacturers, electric utilities, railroads, government, mines, and many others.

We sell these products and combinations of them as equipments and systems mostly by the use of our own technically trained salesmen, although certain types and sizes of customers for certain products are handled through agents and distributors.

Our discussion will deal with our direct sales made by our own salesmen, who have a very large variety of products to offer to a very large list of customers in many different kinds of markets.

GUIDES FOR REQUIRED SELLING EFFORTS

There are many items to be considered in planning and organizing sales assignments and sales work, in directing the salesmen's efforts, and in the integration and measurement of the work done. All of you can list dozens of such items but I shall mention only three basic ones to tie-in with our discussion. These are:

We must know the dollar volume of the available business so that we may obtain a proper alignment of the sales effort with it.

We must recognize and know the dimensions of the differences in selling problems for the various markets and products to be covered, so as to enable us to use the most effective selling approaches as well as the proper amounts of sales effort.

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We must detail the requirements of important individual customers in each market so that sales assignments, sales approaches, and sales effort can be most effectively used to meet our planned performance goals for both markets and products.

INFORMATION NEEDED

Before we can decide how to best handle our salesmen, we must know some of the dimensions and problems of our markets. Among important items to include are:

Total Available

Obviously you should determine what total available business there is and how it is broken down by markets and products. Since our time is limited, let's stick to the market breakdown in our discussion, although keeping in mind the need for similar product information as well.

Available by Market

For many reasons it is desirable to have the available business determined by market, since selling problems, selling approaches, and the "mix" of products all tend to vary somewhat market by market. Selling turbines to electric utilities involves somewhat different problems and approaches than does the selling of fluorescent lamp ballasts to lighting fixture manufacturers.

Figure 2 shows a fairly typical picture of a market for electrical items. It might be steel or paper or textiles, etc. Market levels are expressed in terms of how the orders are placed year by year.

All past levels are shown in constant prices at the 1956 levels, and the expected future levels are shown at the same 1956 price levels.

You will note that the three circles on the chart designate average levels for the past six years, 1951-1956, and for two five-year periods ahead, 1957-1961 and 1962-1966.

You can see that year by year the available order levels varied appreciably in the past. Probably they will continue to do this in the future too. However, over a sixteen-year period there is a very definite upward trend, determined by the averages for the three periods covered.

If management decisions were made only on a short-range basis, those made in 1954 might be quite different from those made

Figure 2

in 1956. However, with the longer-range picture in mind, as well as short-range happenings, management can properly recognize the market growth that is taking place and not be led astray by the annual swings in available order levels. You will note that one line for planning purposes is determined by the average levels for the past six years, and two five-year periods ahead.

Each principal market will show somewhat different rates of growth and variations in the exact pattern of annual swings. Both short- and long-range dimensions are necessary and neither one alone will give all the information needed.

It takes a long time to train salesmen and you can't just hire them and fire them as short-range swings in business occur. Long-range dimensions to supplement those of shorter range are necessary to make proper sales plans in the kind of business we are in.

Market Position

If you keep your orders in detail by markets, then once the available is known you have your market position. Since it is unlikely that you will do equally well in all markets you may wish to

plan for improvements in some. However, to do this job some more detailed information may be needed.

Markets by Area

If you have many markets and many sales areas, you are facing a big job as you attempt your market breakdowns. Again, just one year may not give a very clear picture. In a capital goods business a longer period of time usually must be covered to give reasonably dependable results.

Sometimes you can work on a somewhat broader market base to spot situations that appear to warrant more detailed study, which, if done, is likely to pay dividends in more effective selling.

Figure 3 shows the kind of picture you may obtain from a

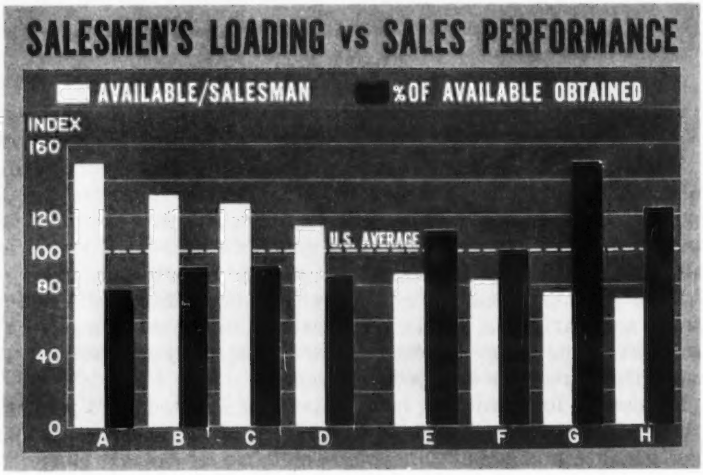

Figure 3

situation study of a combination of somewhat similar markets, taking into account your market position and the sales coverage of the available business in various sales areas.

This is an illustration of a situation study in a broad market made up largely of buyers of components—items customers purchase for incorporation into one of their products. A three-year period was covered in a study made some years ago.

To simplify the chart, for each of eight sales areas we have shown the relationships of the average available per salesman in each area to the market position obtained. As you can see, there is considerable evidence that as we ask a salesman to cover larger amounts of available, he tends to obtain a smaller share of it—skims cream so to speak.

We may look good sales-expense wise in relation to our orders, but we may not have the most effective sales coverage when we have too few salesmen to properly cover the business available to us. On the other hand, we may be digging too deeply into the available business in some areas, with too many salesmen in place for best results.

Since this is a very broad picture, we should draw only broad conclusions from it. However, to the extent that the experience in one sales area is applicable to another, it would appear that:

We may not be sufficiently uniform in our sales coverage of this broad market—sales area by sales area, for most effective coverage.

Our over-all sales plans may not have been sufficiently detailed by areas or at least not well executed.

For a broad gauge situation study such as this, we do not get all of the answers that we need, but we do raise some good questions, and we do indicate some items that appear to have possibilities of paying real dividends if given further study.

As time and manpower permit, more detailed studies by individual markets can be and are made.

"Mix" of Markets in Sales Areas

Different markets often require different sales approaches, and varying amounts of sales effort to reach our planned performance goals. It is, therefore, very desirable to recognize the "mix" of these markets in each of the sales areas. Not only for the planning of the sales program is such recognition and dimensioning desirable, but also for the measuring of results.

Here, for example, in Figure 4, is a condensed version of a picture of the market "mix" in a number of sales areas. As you can see, these sales areas are quite different when the "mix" of the markets is recognized. Sales area A has about the same "mix"

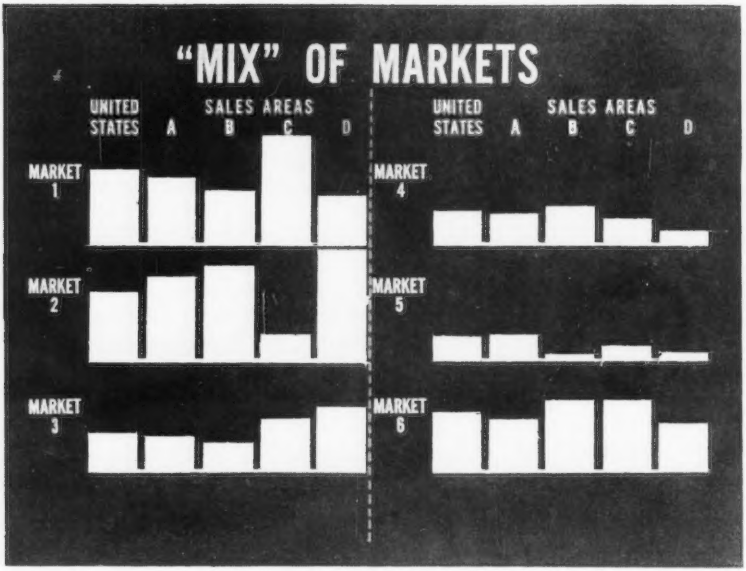

Figure 4

of markets as the average for the U.S., however, the other sales areas have quite a different "mix" of these same markets.

Even though the total dollar volume of the available business might be approximately the same for each sales area, the selling problems may be quite different and the total number of salesmen required by each sales area may be different, too.

Proper recognition and dimensioning of these differences can be of real assistance to local area management in determining items such as required number of salesmen, emphasis on various selling approaches to be used, and for various measurements on these and many other items when results are checked.

For top management interested in the operations in all sales areas, such detailed information is also essential to establish relative measurements and to help obtain a well balanced and effective sales operation, both by market and by product.

Sometimes a sales area operation can look very good if only

over-all measurements are applied. However, more detailed checks may show this to be the result of top performance in a few markets or with a few large customers, and much below average performance in other spots.

With more detailed information, much can be done to indicate where we may improve the over-all operation, with better balance and more effective coverage.

Customer Evaluation

Salesmen sell products, or equipment, or complicated engineered systems and they sell them to customers. So eventually the marketing researcher must help determine, in some detail, what business is available from each important customer.

For many of our customers, this evaluation becomes a little complicated. Salesmen do not contact many customers just because they are likely to place orders in certain amounts, but also because they influence in varying degrees the orders that are placed by others.

For many types of business, especially on large complicated jobs, it is necessary to expend sales effort on the headquarters of a large company and also on one or more branch plant locations. Consulting engineers, contractors, etc., may be involved and all require some sales attention. This multiple sales activity frequently crosses sales area boundries, involves various markets, products, etc., and all on the same job.

The important point here is that your readings or evaluations must be in terms of the way business is conducted. While such determination is not an exact science, help can be given to narrow the field where final management judgments must be made as to what sales effort must be expended to do the job planned.

When we build up market and sales area pictures customer by customer, we obtain valuable information. The totals thus arrived at also can be checked against totals obtained by other research methods tied in with other over-all market and product data.

So with adjustments, and further study, we obtain dimensions with product detail down to a customer-by-customer basis.

With such detailed customer dimensions, in addition to the short- and long-range market and sales area information, much can be done to obtain the most effective sales coverage.

For example, like customers can be grouped together for the specific sales approaches best suited to them. Greater uniformity of sales practices and sales assignments in the sales areas can be a result. And individual customers can receive their proper sales

XUM

attention with less tendency to undersell the really good customers and oversell the ones where somewhat less sales attention might be indicated.

SUMMARY

In planning, directing, and measuring the work of salesmen, management requires much help from the marketing researcher. To summarize the very brief picture given today, we may include the following:

The determination of available totals, both short- and long-range for broad and individual markets, each having their own selling problems.

A similar determination from a product standpoint.

The determination of the portion of these national totals that are available in each of the sales areas where sales management and salesmen are grouped.

Providing proper dimension on sales areas which recognize the "mix" of kinds of business that are available there. Also to indicate the individual characteristics of these various kinds of markets and customers which help determine necessary sales effort and sales approaches.

The proper alignment of the available information to assist in obtaining more uniform, balanced selling and effective sales coverage, area by area, allowing for different sales approaches where required.

The evaluation of each important customer as to his available business in terms of the way business is conducted so as to help in the better alignment of sales assignments and to make more certain that each customer obtains his proper measure of sales attention.

In the limited time available for this discussion, we have covered only a few of the many things that may be done in helping management with its job of planning and organizing sales assignments and sales work, in directing the salesmen's effort, and in the integration and measurement of the work done.

Selling is not an exact science and success can *not* be achieved just by having a mass of figures, a lot of analytical work, and reports. Much of sales success always will depend on the abilities, the hard-won knowledge and the judgments of the salesmen and their managers.

However, as the volume of business grows and as this business

becomes more complex and competitive, there is an increasing need for more and better information on items such as we have discussed.

Practically useful information, if it is understood and used by top sales management, local sales management, and salesmen, can help them do an even better job in a complex and highly important business such as the electrical industry, and I suspect in your business, too.

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DIRECTING INDUSTRIAL SALESMEN IN THE PROPER USE OF INDUSTRIAL SALES POTENTIALS

SYDNOR V. REISS*

Graybar Electric Company, Inc.

WHILE in the Pittsburgh area recently I traveled with our industrial salesman down the Ohio River from Wheeling to Parkersburg, West Virginia on the West Virginia side and returned on the Ohio side. There are located in this area many large industrial plants which produce chemicals, rare metals, aluminum, to list but a few of their products.

As we drove from plant to plant we became better acquainted and the salesman began talking about his problems in dealing with the purchasing agents at the different plants. This was not only interesting to me but also gave me some ideas, so I encouraged the salesman to talk. I asked him what he considered to be his most difficult problem and got this reply: "My most difficult problem is knowing how much time I should spend at each plant."

He then asked me if I could not develop for him some sort of a measure which he might apply to each account to determine how much business he might expect from the account each year. If I could do this for him, he would then know how much time he could afford to spend on the account. We in marketing research are looked upon by most salesmen and many sales managers as having some special gift which enables us to look at a plant and say that is a $10,000 a year account.

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I told the salesman I had no simple measure to give him, but I believed I could help him. I asked him if he knew how many electricians were employed in each of the plants. His answer was no he did not, but he did know the chief electrician at a number of plants. Next, I asked if all of the plants purchased locally or if some purchased through central purchasing departments. He knew that several plants purchased through their Pittsburgh office but since the Pittsburgh salesman got credit for these sales he did not call on the local plants. I asked him some other questions: Do any of these chemical plants produce corrosive chemicals and therefore have a high replacement rate? Do any of these plants make their own alterations and additions or do they have contractors do the work? Do any of these companies need special types of electrical equipment such as explosive proof fittings? Which are higher in price than regular fittings.

The salesman finally said, "I think I see what you are driving at. Even if I had a measure of potential I must also know a lot more about each account before I can properly use it."

About the time that I began to prepare this paper, I happened to see in the April 5, 1957 issue of *Sales Management*, the article with this quotation as its caption, "70 per cent of Industrial Sales Calls Are Ineffective and Worthless!" This caption was the result of a survey made by the purchasing department of a large company.

If this surprises you and if this is typical of industrial selling, then I hope that we may be able to develop some ideas which will be helpful to the Industrial Salesman in increasing his efficiency.

Who is this Industrial Salesman? What are some of his qualifications? An Industrial Salesman is: An engineer or a technically trained person. An expert on products and processes in his field. He usually sells machinery, other equipment or services which may involve considerable change in the operation of his customer's business. His starting salary is usually higher than other types of salesmen. And, his average earnings exceeds the earnings of most other salesmen.

We are dealing with a high-priced person. His time is costly. It is, therefore, most important that we do all we can to make him as efficient and effective as possible. From my own experience with our salesmen, I am sure he will welcome whatever help we can give him.

A good portion of the discussion which follows is really a description of how we help our own industrial salesmen in developing their sales territories. Industrial Sales Potentials have a part to play, but for the present it is a minor role. This is due to the fact that we have been able to develop but few Industrial Potentials.

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Omitting the details, we have established the following procedure:

Make a survey of the territory to determine the location and name of each customer in whom we are interested. The surveys in some of our districts have been done by a team of our own people. In other districts the task is given to the salesman to do for his own territory. We have supplied these field people with suggested sources and other helps such as questionnaires.

Prepare a list of prospects. The prospect lists are grouped by class of customers, such as contractors, industrials, utility companies, etc. The first use of potentials is made in this operation. For contractors we use the number of electricians he employs. For industrials we use the number of electricians and the total number of employees. For utilities we use the number of customers served. In some areas of the country the number of employees for individual companies is not available from published sources. Under this circumstance we use only a credit rating. I should also add that all prospects are checked for credit. Thus we eliminate from the total list of customers those small ones on whom it would not pay the salesman to call.

Assign accounts to salesman. The salesman is assigned the accounts in his territory, which include those on whom he is already calling and the new prospects. Most of our districts have the salesman complete a history of each account. This is done by using a questionnaire, some of which are very simple and others which include details on products which the customer buys, are more complete.

Rating of customers. We have for the most part left the rating of the customer up to our salesmen. Some of our districts have their salesmen select their 20 "Best Accounts." So far we have not set up any criterion for the "Best Account."

There are those of you who believe a salesman is like the candidate for sheriff in a small country town when it comes to rating a customer. The candidate, Jake, had a list of voters and after calling on each of them, he would write "for" or "against" after their names. At one house a woman greeted him, "You good-for-nothing get out of here!" Jake said he wasn't tresspassing, but wanted to ask her to vote for him. "Vote for you! Why I wouldn't vote for you if you were the last man on earth!" Jake retreated to the street, got out his list and wrote "Doubtful" after the woman's name.

Personally, I believe the industrial salesman can do a much

better job than Jake did of rating his accounts. It is this ability to rate accounts that we must help the salesman develop. Here is where potentials take on the major role.

I mentioned earlier that we have been able to develop but few Industrial Potentials. We have determined through surveys that electrical contractors purchase certain dollar amounts per year, per each electrician employed. We have also determined the amounts, again in dollars, that utility companies and independent telephone companies purchase per year per customer served. In the case of industrial plants we have determined very little, although we have some figures on the amount purchased per Electrical Maintenance Employee. In one district our people are working on the dollar purchases of electrical equipment per year per ton of steel produced. So far this job has not been completed.

We have worked out a number of potentials involving only our own sales figures, which have been most useful to our salesmen. In fact the salesmen are more interested in these potentials than they are in those we have developed through surveys which show the total potential. They know that other salesmen have actually sold so many dollars per year per electrician, and they consider this a real figure and a better guide to follow.

It is unnecessary for me to tell you why the salesman needs to know the potential of each account, since you all understand that the potential is his best guide in allocating his time. Most of our own salesmen with whom I have worked are eager for help in evaluating their accounts. Many have developed control records for their own use in determining how to best utilize their time.

I recommend to you an article in the May, 1957 issue of *Industrial Distribution* entitled "I'm in Business for Myself." This article shows forms used by a salesman in keeping a record of his activities. In fact, his system is very much like that used by some of our own salesmen.

Before concluding this paper, I should like to return to the statement made at the beginning that "70 per cent of Industrial Sales Calls are Ineffective and Worthless." The proper use of industrial sales potentials would, I am certain, reduce this percentage figure, but only by a small amount. There are many other factors of equal or greater importance. Some of these are:

The salesman's knowledge of the products he is selling. He should study all phases of his products and be able to discuss any of them with the purchasing agent, plant manager, or engineer.

Contacting the right persons. The purchasing agent may be placing the order, but the plant engineer may be doing the buying, since he specifies the product he wants.

Knowing what processes his customer performs and what products he produces. Our salesman did not know.

Knowing the organizational structure of his customer. To whom does the purchasing agent and plant engineer report?

Knowing the policies of his account regarding purchasing, credit terms, service and any general policy which may affect the sale.

Understanding his competition. How does the competitor's product compare? What kind of service, both delivery and technical, is being offered?

Following through after the order has been obtained. The salesman's job is not done until the material is received and the bill paid.

It may take some effort to direct the Industrial Salesman in the proper use of Industrial Sales Potentials. However, once he understands their value to him he will be pounding on our doors for more and better potentials. In fact, developing better industrial potentials has become one of my major problems.

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COMMON CHARACTERISTICS OF COMPENSATION PLANS FOR INDUSTRIAL SALESMEN

CHARLES J. WILSON*

Cresap, McCormick and Paget

SALES compensation is a subject which deserves more attention from the AMA than we have frequently given it in the past. The fact that other organizations—the American Management Association, National Sales Executives, NICB, and others—have sponsored surveys and meetings on the subject of sales compensation emphasizes the responsibility of AMA to carry its share of the burden.

I am going to draw on these studies for my talk today. However, whatever statistics they contain on industrial compensation plans are probably known and readily available to all of you. Therefore, I want to add some personal comments on compensation problems, from the perspective of a management consultant.

Before I start, let's establish some ground rules limiting the scope of our subject today:

We are talking about the compensation of *salesmen,* not compensation for supervisors, district or regional managers, or headquarters sales management.

We are talking about compensation *methods,* not levels of salesmen's earnings.

We are concerned with *direct* remuneration, not fringe benefits, contests, expenses, overtime, retirement plans, and so forth.

Furthermore, we are going to concentrate on compensation for

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industrial salesmen—that is, those selling to manufacturers or to distributive elements in industry.

Within this framework, I want to discuss industrial compensation under three headings: Common practices, Common failings, and Common sense.

COMMON PRACTICES

There are only three basic types of direct remuneration which can be paid to salesmen. These are salary, commission and bonus. A compensation plan may make use of one, two or all three of these elements of payment.

Trends

In the last 25 years, significant changes have taken place in the way these elements are combined into a sales compensation plan. Prior to the 1930's, it was far more common to pay salesmen either a straight salary or a commission on sales. A number of factors have reduced the frequency with which the straight salary or pure commission type of plan is used today.

During the depression, many companies were forced to reduce fixed selling expense through salary cuts. In order partially to compensate their salesmen for this loss of income, they often added a commission element to the lower salary bases. At the same time, commission salesmen frequently were unable to earn a living, and guarantees or minimum base salaries were sometimes introduced into their compensation plans.

With the economic and social measures of the 1930's and early 1940's, the concept of security took on new emphasis. This was reflected in compensation plans by greater stress on the use of a fixed income element to provide for basic living requirements.

During World War II, in a period of shortages and allocation, management was less concerned with selling than with the maintenance of satisfactory customer relationships and the retention of an experienced sales force. This stimulated the use of performance bonuses to supplant commissions on sales which were closely controlled.

Compensation practices also have changed with enlightened sales management. There has been wider understanding of the factors which motivate people, and this has led to greater acceptance of "incentive" forms of payment. At the same time, improved techniques in marketing research and sales analysis have

permitted the building of practical compensation plans based on more realistic forecasts, budgets and estimates of potential volume. With improvements in sales management methods has come a broader concept of the marketing job itself and recognition of the importance of such sales functions as building new accounts and promoting the more profitable items in the line.

Finally, in the 1950's, we have experienced an accelerated economic growth. With this growth, companies have been faced with the problem of attracting and retaining capable employees, including, of course, salesmen. As a result, managements are constantly reviewing their sales compensation plans in order to make them competitive and attractive, just as they are reviewing executive compensation, retirement plans and, in fact, all of their personnel policies. The changes being made in sales compensation appear to be in the direction of fixed income security, with the opportunity for additional income through extra performance and results—because this is what salesmen seem to want.

Extent of Use

The net effect of all of these factors has been a pronounced trend toward incentive compensation, often with these two characteristics: A base salary to cover normal living expenses; and an incentive element to reward salesmen for achieving specified objectives.

To indicate the extent to which the various types of compensation are used, I refer to several fairly recent studies.

Professor Tosdal of Harvard, in the early 1950's, conducted what is probably the largest sampling of compensation practices. This study found that among 1,200 sales forces studied:

> 20 per cent were paid by straight salary
>
> 23 per cent were paid by commission, or by commission and bonus, without fixed salary
>
> 57 per cent were paid by a combination of salary and commission or bonus

Similarly, three recent studies by the Sales Executives Club of New York, the American Management Association and the Dartnell Corporation showed these results:

> About 15 per cent of the sales groups analyzed were paid by straight salary

About 20-25 per cent were paid on performance only with no fixed salary

About 60-65 per cent were paid by a combination of salary and commission or bonus

Although the samples used in these studies are not wholly comparable, the wide use of incentive compensation with a fixed income element is clearly discernible.

Industrial Versus Consumer Goods Plans

Unfortunately, these studies permit only limited comparisons to be made between plans for industrial and consumer goods salesmen. Despite the lack of statistical evidence, the following observations, based largely on our own experience, may be of interest.

At present, the use of incentives is probably a little more common in the consumer products field, but the trend toward incentive compensation applies to both industrial and consumer goods companies.

Straight commission is not as widely used for industrial products salesmen as for consumer goods salesmen, probably because of its high application in specific consumer fields such as housewares, furniture, fabrics and the retail business in general. More-over, for capital goods, commissions (even as a form of incentive over salary) are not always practical because of the large size of orders, low unit sales, the long period sometimes required to consummate a sale, and the fact that several or many people may have contributed directly to securing the business.

Base salaries and total compensation are likely to be higher for industrial salesmen than for the consumer goods group. In part, this reflects the factors just cited. It also reflects the fact that industrial selling usually requires technical skills for which a salesman justifiably is paid a fixed income, much in the same sense as are technicians and engineers.

Typical Incentive Practices

Let us now examine the elements that make up an incentive compensation plan.

Salary. The balance between fixed salary income and incentive payment varies, of course, with the sales requirements or objectives of the individual company. The minimum which salary represents depends in part on what constitutes reasonable living

expenses for the salesmen, consistent with the stature of his position as reflected by the type of buyers upon whom he calls. The maximum is the point beyond which incentives are too small to produce the desired results. Many of our clients find that this point is reached when salary represents about 75 to 80 per cent of total potential earnings.

Frequent procedure in salary administration is to establish a series of salary ranges, which may overlap somewhat, into which salesmen of various classes and calibers can be fitted.

> One such range would apply to the *level* of sales job, such as trainee, junior salesman or senior salesman.
>
> A second would reflect the *difficulty* of the sales job, in terms of number of accounts, extent of travel, degree of territory development, etc.
>
> A third salary range is usually established to reflect the *performance* and *proficiency* of salesmen, including their technical skills and knowledge, and frequently their seniority.

I have not touched on drawing accounts for commission salesmen which, particularly if they are guaranteed, are a form of salary. By and large, these are merely a means of providing sustenance income, particularly for new salesmen or for men in undeveloped territories. Rarely does the draw approach the level of commissions which the salesman is expected to earn.

Incentives. One way of looking at present incentive practices is to divide them into two groups: commission payments and bonus payments.

The commission form of payment is fairly clear cut and needs little discussion here today. However, two points should be made. First, commissions range widely—from a fraction of one per cent on items such as generating equipment to 20 per cent or 25 per cent on machine tool components and parts. Moreover, varying commission rates frequently apply to different segments of the product line. Sometimes, commission rates change at different levels of sales volume.

Second, commissions may be paid on total sales, on sales over quota, on sales over a previous year, or at some established cut-in point. When commission is based on something other than total sales, there is a question of terminology whether this is true commission or an incentive bonus for performance in excess of some standard.

I want to devote a little more attention to the use of the bonus as a supplement to salary in incentive plans.

For our purposes, we can classify bonus programs in two categories:

> Those that are based on achievements of sales volume or profit, or other factors which can be measured statistically.
>
> Those that relate to the performance of general sales duties, to the fulfillment of specific sales tasks, to personal development, or to other factors requiring a judgment evaluation.

The most common form of bonus is that related to sales volume, and usually to sales volume over an established quota. Thus, when a salesman has reached a quota of, say, $150,000, sales above this figure produce additional income for him. When this income is calculated as a per cent of sales in excess of quota, it becomes, in effect, a form of commission as just discussed. Frequently, however, the percentage increase of sales over quota is applied to the salesman's base salary in order to determine the bonus. Sometimes, too, additional sales earn him points which, together with points earned for other sales duties, are then translated into dollars of incentive bonus.

As with commissions, bonus payments on volume can control sales emphasis on product line by setting quotas for each product and establishing preferential rates for exceeding each product budget. Quotas also are often based on sales forecasts, last year's sales, or may use cut-in points.

In recent years, there has been a marked tendency to move profit management and control down the line in the corporate organization. This has been reflected in the sales compensation plans of some companies which provide incentive bonuses to salesmen for the generation of profitable sales volume and for the control of expenses. In these plans, salesmen are provided with gross profit figures by product, and their bonuses are calculated on the profit contribution of their territory. By contribution, I mean gross profit less those expenses for which they are directly chargeable or which they can reasonably be expected to control, such as salary, travel, some promotional expense and the like.

In general, however, companies seem to be turning with increasing frequency to an evaluation of over-all sales performance as a means of determining incentive payments. Sales volume is usually, but not always, one of the performance factors.

With performance bonuses, the sales job is broken down into its major components, and the salesman is evaluated on his success in performing the major duties involved. For example, he might be rated on his ability to: sell new business, keep present business sold, train new men, sell the full product line, or promote the more profitable elements of the line.

He might also be rated on his knowledge of the market, his technical ability and his personal characteristics, such as his maturity and judgment, his work habits and his acceptance by customers. All of these factors can be weighted in relation to their relative importance to the total selling job, and the salesmen rated for each factor. The total point rating arrived at would be used to calculate the performance bonus. Thus, those salesmen with a rating of 80 to 90 might receive a fixed amount of incentive compensation or might be entitled to a bonus of, perhaps, 20 per cent of base salary.

Occasionally, this technique is used to tie in with the sales objectives and plans of the company. These plans are broken down to the territory level, and each salesman is given a set of specific tasks to accomplish and upon which he is to be rated. For example:

Sell 750,000 pounds of liquid resin in 1957

Open four new paper-converting accounts

Reduce non-salary sales expenses to one per cent of sales

Organize and conduct monthly training sessions with dealer salesmen

These are some of the current practices and trends in industrial sales compensation. While there is no standard plan in use, incentive compensation certainly is increasing, and I believe more and more industrial companies are attempting to evaluate sales personnel on the basis of their performance in the total selling job.

COMMON FAILINGS

If the frequency with which we are asked to assist our clients in sales compensation matters is any criterion, it would appear that many companies are not satisfied with their present plans. Some of the more common failings of the plans we have observed are these:

Unrealistic Management Viewpoint

The plan does not provide adequate compensation levels, or, on the other hand, it results in excessive sales costs to the company. Either of these conditions may result from an unrealistic management viewpoint of the importance of the selling function, or of the going rate for salesmen of the type required. They may also stem from the terms and techniques of the compensation plan. Granting that these are the most serious of all compensation problems, I would like to pass on to other common failings which will explain, in part, why levels may be too high or too low.

Inadequate Incentives

The plan sometimes fails to provide optimum incentives to the sales force. This is one of the most common of all problems. Strange as it may seem, many plans fail to recognize the inherent limitations of various compensation techniques and the effect of these limitations on motivation of the salesmen.

Salary, for example, cannot be expected to stimulate salesmen to maximum effort, particularly in terms of hard selling for immediate orders, since it is usually paid only to compensate for the *general* level of performance expected. Of course, the opportunity for salary raises does constitute an incentive of sorts. However, it is hardly practical to adjust salary upward at each rating period; conversely, it is questionable whether salary can be reduced at all for poor performance, except in extreme cases.

On the other hand, if incentive payments overemphasize securing immediate sales, they tend to distract salesmen from many of their important sales functions such as service, new account solicitation and territory coverage. An incentive-oriented plan may encourage overselling and slight the longer-term advantages of orderly development of the market.

A manufacturer of industrial fabrics with whom I recently worked paid its salesmen on a straight commission basis. As a result, the plant was swamped with small yardage orders and with constant requests to bid on highly competitive, low-margin business. The most critical sales problem of the company, however, was the development of new, sizeable markets as distinct from the securing of immediate piecemeal business. Here was a situation in which the compensation plan actually deterred salesmen from carrying out the basic assignment.

The Sales Job Has Not Been Defined

The example just cited suggests the further fact that sometimes the sales job itself has not been clearly understood or defined by those involved in designing the compensation plan. Occasionally, we find differences of opinion among the salesmen themselves, their immediate supervisors and headquarters sales management about just what the salesmen are expected to accomplish.

For example, we recently studied the sales operations of a manufacturer of heavy construction equipment. Replacement parts sales had been a significant part of total volume and far more profitable than original equipment business. Now, however, the company was losing the replacement market to independent parts producers. We found that one reason for this situation was the lack of clear understanding among salesmen and sales management concerning responsibility for parts sales and, as a consequence, no provision had been made for parts sales in this compensation plan.

Obviously, unless there is agreement on the relative importance of the various individual selling duties, the best laid plans go oft awry.

The Plan Is Too Complex

In some plans, the basis for calculating the incentive elements, while eminently sound, may require every salesman to be a statistician to determine where he stands economically. Such a plan is almost certain not to receive the necessary field support; and, since the salesman cannot readily visualize his progress, the result is likely to be not incentive but deferred payment.

Overly complex plans often cause administrative problems which, in terms of time and cost, more than offset the benefits anticipated over a simpler plan. They also suffer, in many cases, from inflexibility, because the incentive elements are so interwoven that they cannot readily be adjusted to changing times or sales conditions.

The Plan Is Arbitrary Or Appears So

Salesmen frequently feel that their compensation is determined by arbitrary decisions of a superior. This is particularly true when merit or performance ratings involve factors other than sales volume or where insufficient use is made of group ratings in order to ensure impartiality and objectivity. Sometimes, rating

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sessions are too infrequent and do not provide the opportunity for frank discussion of areas for individual improvement.

Even more common is the feeling that budgets, quotas, cut-in points and the like are arbitrarily set. If these are constantly revised upward, they may defeat the incentive purpose. This is also true of changes in commission rates, penalties for failure to meet quotas, provisions against windfalls, etc. These difficulties are multiplied when sales management does not explain adequately to the field force its reasons for the terms of the compensation plan.

The Plan Is Based On Inadequate Or Unreliable Data

Many plans fail because they are based on inadequate market data. A company may, through ignorance, assign commission salesmen to territories which later prove to be of widely different sales potential or in different stages of development. Lack of information about product costs and product margins may lead a company to overcompensate its sales force for pushing unprofitable items. Compensation plans may also break down because of unrealistic forecasts or quotas which salesmen cannot attain, regardless of effort.

The specific structure of a compensation plan must be dictated, therefore, by the availability of data on which to base its incentive elements and measure sales results.

The Plan Is Unrealistic

It should be evident that a compensation plan cannot substitute for training, supervision and field sales management. As soon as a plan attempts to provide for every sales contingency, it is likely to become unwieldy, overly specific and inflexible. For example, I have seen attempts to spell out, for performance bonus, each minor, detailed task of territory salesmen on a quarterly basis, much as a field supervisor might plan the next month's work with his men.

On the other hand, too many plans are developed with complete disregard for actual field conditions. They may fail to recognize the extent to which windfall business affects the volume of individual men. Sometimes, they provide for crediting sales to individuals or territories when, in practice, this cannot be done. Sometimes, they ignore the fact that the company, because of its expansion into new markets, must subsidize a large share of the sales force. Your own experience, I am sure, would point out the need for reviewing field conditions before developing a plan.

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COMMON SENSE

The construction or revision of an industrial compensation plan obviously requires certain technical skills, and generally the blessings of the Controller, the Industrial Relations Manager and various other non-sales executives as well.

It also requires a fair share of common sense. From my own observations of both successful and unsuccessful plans, I would like to set forth seven rules to follow, which, though they certainly are not all-inclusive, are general enough to apply to the majority of situations.

Define the sales job carefully, and agree on the relative importance of various selling tasks.

Develop in principle the proper balance between fixed income and incentive.

Determine the incentive techniques which will induce maximum sales effort in the desired direction.

Keep the plan as simple as possible, consistent with its objectives, and flexible enough not to require radical modification as marketing conditions change.

Test the plan on a pro forma basis before installation using present volume levels, future sales forecasts and possible variations from anticipated volume.

Establish beforehand the mechanics of administering the plan, including provision for status reports, for prompt payment and, particularly, for equitable and objective ratings of sales performance.

Consider salesmen's opinions in designing the plan, and—most important—explain and discuss the specific elements of the plan with salesmen before installation.

These rules, if followed in establishing or revising a compensation plan, may not solve all your compensation problems; but at least the obvious pitfalls and the reasons for failure of many present plans will have been avoided.

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INDUSTRIAL SALESMEN'S COMPENSATION: A CASE HISTORY

JAMES DOWD*

Air Reduction Company, Inc.

AIR Reduction markets four kinds of products: chemical, medical, carbon dioxide, and welding, which was the original and is today still the major portion of this company's business. As this case history is concerned with compensating salesmen who sell welding products, some background information on the welding industry and its markets will clarify the nature of the hundred-million-dollar selling task for which these salesmen are paid.

First, a capsule history of Air Reduction's welding business. The company started in 1915 by reducing air into its component parts in order to get the oxygen which, with acetylene, produces a very hot flame useful for cutting and joining metals. Oxyacetylene welding and cutting apparatus was soon added to the line, together with related supplies and accessories. The Air Reduction salesmen now had a complete package of one family of welding products.

At a later date a second family was added—arcwelding, which uses the heat of an electric arc to join metals. The arcwelding equipment which provides the welding current, the electrodes and related accessories gave the salesmen a broader market to sell—and concomitantly, a broader product knowledge requirement.

Air Reduction was following a policy of everything for the welder, so as more sophisticated problems arose in the joining of the modern metals—stainless steel, aluminum, titanium— the company pioneered a third family of welding equipment and supplies: arcwelding shielded by inert gases like argon or helium. In addition, uses for the gases developed which were outside the field of cutting or welding—so that the salesmen now have to know

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not only the products, but also the growing variety of processes by which these products are used.

Welding deals with metals, and metals involve metallurgy—an extensive science which is steadily expanding. Due largely to metallurgical complexities, the company now has over 30,000 separate items in the line. So, while Air Reduction does not presently have everything for the welder, it does have the widest line of any supplier in the industry—which means that Air Reduction's salesmen face the most competition, and have to know the most. To assist them, technical specialists are employed.

So, what originated as a short and simple line of maintenance tools and supplies has evolved into a fantastic array of capital production equipment, a wide assortment of consumable supplies, plus huge volumes of industrial gases (which are also consumable) and finally, all manner of accessories: safety clothing, hardware items, and other industrial sundries. This makes it difficult for the salesmen to sell "across the board"; some items they promote, and some they do not, often for lack of time. And having so many related items for the welder makes it easy for the salesmen to become order-takers.

Who buys these products? Industry-wide, several million customers, from garages to guided missiles, food processers to steel mills; electronic plants, atomic energy installations, farms, coal mines, Navy yards, plumbing contractors—this is just a sample of the wide range of users. This market is worth over three-quarters of a billion dollars this year—and it is rising about 10 per cent annually. Half of this market, dollarwise, is largely reached through wholesalers: primarily welding supply houses, and also mill supply houses and other industrial distributors. The other half of this market is largely served directly. It consists of less than 10,000 users, all substantial and most of them "split" accounts (because of the breadth of the product line). This means the Air Reduction salesman usually has his foot in the door, but not often on the buyer's desk.

There are two further points worth mentioning in this preface: the nature of the business, and the nature of the selling job.

First, the nature of the business. The gas end of the business is utility-type: a high fixed investment in production and distribution facilities and a low priced, high volume product. Gases are sold via a purchase agreement with the customer, usually for one or two years' duration. Competition is local: that is, other suppliers cannot compete without having producing facilities in the same general area because of freight costs. Conversely, this means Air Reduction's salesmen cannot compete without the

support of local facilities. And as a corollary, these salesmen cannot compete without adequate spare capacity to handle the requirements of new or expanding customers.

The "hard goods" end of the business consists of capital items—large and small pieces of apparatus, consumable items like electrodes and the accessories. Direct shipments can be made from factory to customer, or factory to wholesaler, or else shipments can be made to customers or wholesalers from over three dozen field warehouses. The wholesaler is a big factor in the movement of all "hard goods" except the costly apparatus, which requires considerable technical know-how for selling, installing and servicing. Freight costs are a considerably smaller part of the selling price, so any manufacturer can compete in a given area, and the wholesaler can compete with the manufacturer. The wide variety of items in the line leads to inventory problems, frequently too much inventory, and yet shortages in certain items.

So much for the nature of the business. As for the nature of the selling job, the salesman is in contact with more than the purchasing people; personnel in engineering, production, plant maintenance, stores, and at times top management are also called on. Part of his task is goodwill in nature, insuring that deliveries are satisfactory, for example. He handles product complaints and billing complaints from the customer, and complaints from his own shipping or credit department regarding the customer will also require his attention.

To an increasing extent the discovery, analysis and solution of customer needs is a team job. The salesman and the technical specialist participate in the sale of a production process which involves capital equipment plus gases and/or electrodes or welding wire. The shipping department must be geared in on type and quantity of gas delivery; both warehouse and factory are apt to play a role in the "hard goods" aspect of the sale. Since many gas purchase agreements apply to some or all plants of a large corporation, the selling accomplishment in one district often brings business to other districts. The larger the customer in terms of requirements for welding products, the more certainly will sales management be actively in the picture.

Paralleling the growth of the industry and the enlargement of the salesman's job was the development of a succession of four compensation plans, the highlights of which are reviewed here.

The first plan goes back to the early years of the company when the salesmen were paid a commission on the "hard goods" only. Their recompense for selling gases was in the form of a salary. Furthermore, there were three or four commission rates

applicable. The highest percentage was on gas welding and cutting apparatus, with lower rates on gas welding supplies and accessories. This variation in rates appears to have been based on relative margins of gross profit.

As the arcwelding equipment, supplies and accessories were added to the product line, the salesmen's opportunity for commissions was enhanced, with the result that, whereas in the early 'twenties less than 15 per cent of the salesmen's remuneration was in the form of commission, by 1940 more than half of the salesmen's compensation was derived from commissions. (No doubt this development was accentuated by the defense build-up.) The advent of World War II terminated this first plan, which in its twenty years or so of existence undoubtedly underwent some modification. But the records are scanty. At any rate, the welding industry—and Air Reduction—had grown and prospered in the period between the two World Wars.

In World War II the welding industry really came of age: In the shipyards and fabricating shops Rosie the Welder joined Rosie the Riveter in joining metals on a vast scale. The nature of the salesman's job, which was that of expediter, allocator and technical advisor on a straight salary during the war years, was rapidly becoming less simple. Industry was introduced to welding in a big way and for keeps.

How to compensate the salesmen now that the war was over? That was a question which Air Reduction's management faced in the realization that the pre-World War II days were gone forever. Products, markets and welding technology had grown more complex. While studies were undertaken to develop a compensation plan more in line with the new era, an interim performance award system was installed.

Certainly, right after the war there was a need felt to provide incentive for the salesmen, since a readjustment period of uncertain length and depth had to be faced. Under these circumstances, then, this second plan made sense. Before vacation time and before Christmas a salesman could receive a semi-annual bonus for his sales performance. Each district manager simply estimated or adjudged the achievements of his salesmen, both qualitatively and quantitatively.

Such a plan was naturally easy to administer. The company made available a pool of money to each district and the district manager split it among his salesmen as he saw fit. He could cut the amount down, or even withhold it completely, if he wanted to discipline a salesman for too many sloppy or late call reports, for instance. Seniority tended to determine the amount a salesman received in the absence of outstanding or subnormal achievement.

Naturally, the application of such a plan could—and did—vary from district to district. However, the average salesman's commissions accounted for 20 per cent or less of his total income, so there was a limit to the impact of arbitrariness. Despite its drawbacks, the plan served as a stopgap measure up until 1948, when the point quota plan was introduced.

This third plan was a salary plus commission arrangement which provided for monthly commissions if sales exceeded quota. Both sales and quota were figured in points per $100 of sales. There were four categories of points, according to product and channel of distribution. That is to say, the variation in points per $100 of sales was *intended* to reflect differences in net profit. (Intended, because of a reliance on averages in marketing costs which ignored variations in customer or order size. The cost implications of these latter factors were not appreciated until a later date.)

Here is how the point system worked out: sales for the last nine months of 1947 on a monthly average basis were converted into points to establish the quota. The salesman's current monthly sales were converted into points. The per cent by which the salesman exceeded his quota was doubled, and this figure, applied to his salary, determined his commission. So if a salesman exceeded his quota by 10 per cent, he received 20 per cent of his current salary as a commission. This plan applied to gases as well as "hard goods."

The point computations made the plan difficult to administer. Changes in sales territories, changes in prices, and the gain or loss of accounts for reasons over which the salesman had no control all required quota adjustments. February was seasonally low, but the quota was not seasonally adjusted, so fewer commission checks were written in that month. Some billing "monkey business" was inevitable; deferred billing on a sizeable "hard goods" order, when a salesman was having such a poor month that the order could not boost him over his quota, was one way a manager might assist a deserving salesman to a commission on the following month's business.

Salesmen's earnings varied widely under this plan, both from month to month and from man to man, with the average salesman deriving some 30 per cent of total earnings from commissions. During the 1949 recession, customers' requirements naturally dropped through no fault of the salesmen. The 1947 quota base was therefore revised downward...and then came Korea. The plan was dropped in the fall of 1950 in favor of a sliding per cent of sales plan.

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This fourth plan, which has continued to the present day with some refinements, features base salary, commission, and new business dividend. The commission rate is a per cent of sales (both gases and "hard goods") which falls off as sales increase. Thus, for $200,000 of sales per month the salesman receives almost four times as much commission as for $20,000. But while the rate falls off as the sales volume increases, there is always a positive increment in dollars of commission for every increase in dollars of sales. This sliding scale certainly helped to equalize sales territories and yet avoid quota problems. (The tremendous variation in size of accounts, coupled with geographic unevenness in the location of industrial markets, poses a tough problem for any sales manager in balancing out sales territories among his salesmen.)

The new business dividend is a shot-in-the-arm feature which pays the salesman a one-time bonus of 10 per cent of the monthly value of gas business newly acquired by him. This is in addition to the regular commission he would enjoy from this business. This bonus does not apply to very small accounts, thereby reinforcing selective selling policies which call for dealer service for accounts of this size. It also flattens out for the large accounts because, as already indicated, other individuals in the marketing organization are involved with accounts of this stature.

Commissions presently account for about 30 per cent of the average salesman's total earnings, which, by the way, are independent of expense allowances. The company's feeling in regard to base salary is that stability of income is essential for the industrial salesman whose efforts take months, perhaps a year or more, before an order, or a gas purchase agreement can be secured. On the other hand, once some gas business is acquired, the salesman usually has a considerably easier road to travel. This is apt to be the case with the longer term gas agreements.

This plan has proven to be simple to administer—a table of commissions eliminates computations. Also eliminated are the wide earnings fluctuations from man to man and month to month. As a matter of fact, commission expense can be readily budgeted from the sales forecast. Furthermore, it greatly minimizes the effect of sales declines, particularly those morale-jarring ones over which the salesman has no control.

On top of the salary-commission-new-business-dividend features there can be imposed any special commission plan, usually of six months' or a year's duration, to spark the promotion of any particular line of products management feels needs this emphasis. These special arrangements are normally based on a straight per cent of sales of the products in question.

And yet management is becoming less than satisfied with this plan. Does it really provide incentive? Can a realistic compensation plan be devised in the face of increased team selling? Should the company sign off this plan and revert to straight salary pending some new plan?

Some managers appear satisfied with the plan; and some are definitely not satisfied. They disagree on the question of incentive, for example. So it is not easy to predict what the next plan may be like. It should be better not only because of past experience, but also because of an increased awareness of technological and team selling trends, of the relative values of various channels of distribution, of markets and of market growth.

There is an increased understanding of the integrated marketing concept, and a newly modified organization structure reflecting that understanding. Then too, there is an increased perspective that financial incentives are only a part of the incentives that motivate salesmen, and that the over-all problem of salesmen's incentives is only a portion of the task of managing a sales force, which in turn is only a segment of the total marketing endeavor. So Air Reduction will inevitably arrive at some new and improved plan for compensating its welding salesmen.

The moral of this case history might well be: Apart from its merits or imperfections, a compensation plan varies with the times. There are the long term trends, such as those in the direction of more technical selling and team selling and centralized purchasing of standard commodities. Then there are the shorter trends—or cycles—from peace to war to peace, or from boom to recession to boom, or from periods of short supply to overcapacity to short supply. So just as product lines must be modernized through modifications and introduction of new items, and just as the structure of the marketing organization has to be revamped for better adaptation to changing markets, so too must compensation plans be periodically revised—or even replaced—if a company is to respond more fully to the challenge of marketing progress.

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A SITUATIONAL APPROACH TO SELLING

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SALESMEN and the selling process have been the subject of as much or more research than any other single phase of business. However, it is still an area where there is much to be learned. Specifically, the problems of salesman selection and evaluation still cannot be undertaken with any degree of confidence of the results. In spite of the many and highly refined psychological tests available for selecting salesmen, even ardent supporters of these tests admit a lack of success in many non-technical sales areas. Previous research in this area has concentrated either upon finding the best type of salesman, personality-wise, etc., or upon sharply defining just who and what type of people the prospects are. Rarely has it even mentioned the problems of the interaction of the salesmen and the potential customer in this highly structured relationship.

The research which I am now engaged in consists of a study of the interaction of the salesman and his prospective client. It is this interaction of the two people in a given situation that creates an atmosphere that either stimulates the completion of the sale or blocks it. This atmosphere can be the result of social, economic, physical, or personality characteristics of both the members of the situation. A sort of general hypothesis of this study is: the sale is a product of the quality of the particular interaction situation of the salesman and his prospective client rather than a result of specific qualities of either alone. There is a range of both psychological and physical attributes or qualities for both the salesman and his client, and how these characteristics "fit

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together'' may determine the outcome of the relationship. Salesmen can create obligations to themselves with certain kinds of people and not with others. In other cases the sale may evolve because of a certain similarity or difference of physical characteristics. For example: in many selling situations the client looks to the salesman for advice or guidance in solving his particular problem. In some respects this salesman would be a ''father'' symbol to the client, offering advice. To fulfill this role the salesman needs to be older than the client. In this case the exact ages of the client and salesman are unimportant; what is important is that the salesman be enough older than the client to be able to satisfy the ''father'' role. In some situations a variable like this may be the crucial one which determines whether or not the sale is made.

BACKGROUND OF THE STUDY

The bases and methods of this research are drawn directly from the social sciences, especially from sociology and social psychology. In particular, previous social science research in three areas tends to indicate that the important variable in many situations is the interpersonal relationships of the participants.

First, recent small group studies in sociology have shown the importance of other people in shaping many decisions made in the general area of marketing.[1] These studies have shown that the flow of both influence and communication does not go directly from a manufacturer to a large atomized audience in many real life situations. First the idea, or product must enter the relevant group to which the potential customers belong through some person who serves as an innovator or gate-keeper for the group. Then the adoption or rejection of the idea or product depends upon the judgment of the group leader. If the leader judges it acceptable to the group norms he sanctions its use, hence purchase by other members of the group. The relevant group in many cases is the family, other times it is neighbors or informal organizations. In these situations it is someone else—the group leader—who sets the pattern for purchase or rejection of a new item.

Next, recent studies of leadership tend to discredit the idea of a set of general traits of leadership. The conception of the person born to be a leader, who will rise to the top no matter what, has lost many supporters in late years. In many cases the leader

1. E. Katz and P. Lazarsfeld, *Personal Influence* (Glencoe: The Free Press, 1956).

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simply represents and embodies the values of the group.[2] Between groups and between different situations within the same group, the qualities that make a person the leader of the group change. He cannot be characterized by any given set of physical or personality characteristics. This is not to say that the leader does not have qualities and traits which set him apart from the followers, but that these traits are not stable in different situations. Insofar as this parallel of leadership qualities applies to salesmen, one would believe that the qualities which distinguish a good salesman from an average one are not stable enough from situation to situation to allow for the selection of salesmen by personality or physical traits alone. How these qualities fit the norms of those they contact must also be taken into account.

And finally, role theory of social psychology indicates that each person has several various roles of life within our culture. Each person has expectations of the results of his own role and expectations of others depending upon their roles. A role is the goal directed pattern that a person carries out in a social relationship. The role is due to the person's position in the culture, not to his individual qualities. For example: my role as a father gives me expectations of some obedience from my children and gives them expectations of me for food, clothing, shelter, a weekly allowance, etc. The influence of role expectations is an important determinant of the results in many social situations. Studies of interviewers have shown that the interviewer has role expectations of the person he is going to interview. When these expectations do not fit what the respondent really is, the interviewer may bias the answers he seeks to fit his own expectations.[3] Insofar as prospective customers have definite role expectations of the salesman, whether they buy or not may depend upon how the salesman fills their role expectations.

From this background the following hypotheses were developed to be tested in examining this general area of salesman-prospective client interaction.

Salesman's self evaluation:

> The successful salesman perceives himself as being like his customers.

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2. S. C. Homans, *The Human Group* (New York: Harcourt, Brace and Co., 1950).

3. H. Hyman, *et al.*, *Interviewing in Social Research* (Chicago: The University of Chicago Press, 1954).

Customer's evaluation of the salesman:

> The "sold" prospect perceives the salesman as being like himself or as embodying traits he considers desirable.

Attitudes, attributes, and characteristics of the prospect and the salesman as a pair:

> Certain similarities or differences of these create a favorable selling situation.

In testing these hypotheses it is felt that allowance must be made for prospective clients who, in general, are not influenced by other people. Recent psychological literature has shown that people can be divided into two broad classes. People whose judgments are influenced by the external environment, and those whose perceptions are anchored within themselves.[4] The same general type of distinction has been made more popular by David Riesman who has categorized us as being either "inner-directed" or "other-directed."[5] People who are "inner-directed" would not be expected to react in any specific way to the salesman. To these people, the salesman's function is only that of transmitting information. However, to "other-directed" people the personality and methods of the particular salesman are an important determinant of the sale. If, as Riesman says, as a nation we are rapidly becoming more "other directed" the interaction aspects of the customer and salesman take on increasing significance.

THE SAMPLE

For this research, life insurance salesmen and their prospective customers are being studied. These salesmen provide an excellent group for study for several reasons. The sale of life insurance can easily be conceived as depending upon the interpersonal relationship between the prospect and the salesman. Life insurance is an intangible product. Purchasers are not technically qualified to judge the benefits of various companies and seldom avail themselves of the opportunity to make direct price or feature comparisons of the offerings of different companies. The customer often relies upon the salesman to tell him what he "should" have.

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4. H. A. Witkin, *et al.*, *Personality through Perception* (New York: Harper and Brothers, 1954).

5. D. Riesman, *et al.*, *The Lonely Croud* (Garden City: Doubleday and Co., abridged edition, 1956).

It is often said in this field that no one "buys" life insurance. They are "sold" it. Also, life insurance companies have done a great amount of research in the field of psychological testing of sales aptitudes. This material is available for comparison with the research I am doing. It is interesting to note that some companies in this field which have used psychological tests extensively, readily admit that the value of these tests for predicting sales aptitudes is limited. No general characterization or profile of the successful salesman has been developed.

THE METHOD

For this study salesmen and both sold and unsold contacts are interviewed; a similar questionnaire being used for both groups. Among the methods of research analysis is one of the newest techniques developed in the social sciences. It is called "Pair Analysis." For each salesman interviewed in this study, four of his contacts are also interviewed. Two of the contacts are those which produced sales, two which did not. Thus the salesman and his four contacts may be viewed as comprising four pairs—the salesman being a member of each of the pairs. For each item in the questionnaire a comparison is made for similarity or difference within the pair with respect to this item.

Mechanically this is done by placing the coded data for each pair on an IBM card. For example, the salesman's answers to questions about his background, attitudes and role expectations are placed on certain columns of the card and like responses of the contact are placed on the other half of the card. Similarities and differences are then tabulated by running the cards through a counter-sorter machine twice; first sorting by the salesman's column and then re-sorting these groups on the corresponding client column. These results are then combined into an index of similarity or homogeneity for each item of the questionnaire. Before analysis of these results the indices may be tested statistically for significant differences.

Some of the other methodological problems of this research involve some original equation of the sold and unsold prospects of each salesman so that there are no great differences in original interest in the product, in socio-economic class, number of dependents, etc. The selected salesmen are stratified by age, income and tenure with the company to insure representative coverage of the profession.

OBJECTIVES OF THE STUDY

The over-all objectives of this study are to apply a new approach to understanding selling and the many complex factors that constitute the selling situation. Inquiry into the nature of these factors may result in ways for better utilization of selling manpower and more profitable allocation of resources of the firm. Also important is increased job satisfaction for the individual salesman.

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PRICING IN A DECLINING MARKET

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INTRODUCTION

A DISCUSSION of pricing in a declining market seems inappropriate during a period when policy-makers are properly concerned with the threat of further inflation. Unfortunately, businessmen in many industries will find it a timely topic.

Although the remarks that follow deal with pricing in a special market situation, my main object is to illuminate the pricing process *in general*. I would say most strongly that a price-setter almost always faces a special situation and that broad general rules about price rarely fit. By exploring pricing in a declining market, we limit ourselves to one of many situations that persons responsible for pricing face sooner or later. We might have elected to discuss "pricing during a period of rapid technological change;" "pricing during a shortage;" "pricing when newcomers are entering the market;" "pricing when inventories are heavy;" "pricing when sellers are 'cash-short';" "pricing when one's models and styles are winning consumer favor;" and "pricing when one's models are unpopular with consumers." Compared with such manifestly narrow and specialized topics as these, a paper on *Pricing in General* (or, *Pricing under Normal Conditions)* would be even more specialized—not to mention irrelevant and remote. A "normal" market situation may perhaps be best defined as the period during which one's predecessor was setting prices.

A wide gulf separates the description of pricing offered by price

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theory and the process by which prices actually are set. That gulf is narrowing somewhat as businessmen are applying a few of the concepts of formal theory. Also, some economists are making greater efforts to understand what businessmen do about price and to contribute solutions to their day-to-day problems. I mention the big gulf between price theory and business practice to stress the urgency of accounting for the gap. Once we have done this, we can take steps to narrow it. By mutual understanding and cooperation, price theorists and business practitioners can change pricing from two separate and unrelated subjects into a single subject.

Why do the writings of price theorists help businessmen very little in setting a price? Reduced to a single sentence, businessmen just don't know their cost and demand curves and do not know how alternative actions would affect *future* costs and demand conditions.

We must recognize that a large part of price theory represents simple principles of mathematics (the principle of marginalism) applied to the specific subject of pricing. It helps only when one knows the numbers.

On the other hand, the businessman's problem is not essentially mathematical but consists of estimating the effects of various marketing policies upon sales—both in the near and more distant future. Specifically, he wants to know whether prices affect sales greatly or relatively little; and, if sales are affected strongly in the near future, he wants to know whether the effect is simply to push sales into the present that would otherwise have occured somewhat later. He wants to know whether a dollar spent in the form of a price reduction has greater or less effect upon sales than an equivalent expenditure on advertising, additional salesmen, improved styling and packaging, etc., and whether the longer term influences of these changes are more or less favorable than the effects of an equivalent price change. Thus, the price theorist primarily tells the businessman how to analyze data which the businessman does not have.

One is seriously mistaken if he thinks that the businessman needs lessons in simple arithmetic, even though he often seems to act as if he could not pass a course in high school mathematics. As a substitute for the data he lacks and to make pricing manageable within the time he can devote to it, the businessman often resorts to formulas, rules of thumb, or takes refuge in reliance upon intuition and other mysterious and mystical procedures which seem to violate basic rules of arithmetic.

In short, the gulf between price theory and pricing practice can be traced primarily to the absence of market knowledge that is assumed in theory. It is for that reason in particular that my remarks shall raise questions about what businessmen will and can, in fact, know about the state of demand and what they might possibly do to increase their knowledge and improve the quality of their guesses.

THE DETECTION OF A SALES DECLINE

Many benefits might flow from speedy recognition of a sales decline. Armed with such knowledge, executives could take actions and make statements that would cushion the impact of the sales slump on themselves and upon the industry as a whole. For example, when it concludes that sales have started to drop for cyclical reasons, an influential management might issue a public statement which describes recent sales experience and forecasts its future course in an effort to influence the thinking and behavior of the rest of the trade. If it could make a convincing case for the thesis that any decline in sales would be extremely short-lived, it might prevent unwarranted price reductions by members of the trade who are most vulnerable and easily frightened. Similarly, prominent members of the trade with a good reputation for meaning what they say might do a great deal of good by indicating the price actions they will take in the event the sales decline continues. As a minimum, prompt discovery of a sales decline permits management to select its own remedial actions with care and after careful deliberation; rather than as a hasty reaction to an unexpected emergency.

It is very well to contend, as I have done, that there is much to be gained from detecting the sales decline promptly, but there remains to establish that it is possible to do so. Let me acknowledge at the outset that it is extremely difficult to detect a sales decline in its earliest stages; indeed, one even has difficulty in defining in operational terms what is meant by the beginning of a sales decline. And, paradoxically, it is often easier to forecast sales than to detect a sales decline after it has begun.

Why is it so difficult to detect an incipient sales decline? Put simply, the reason is that even when on hindsight it turns out that sales have been steady or increasing, there will be periods when they have fallen for no apparent reason. Sales may be said to be irregular even when they are stable. The reasons for temporary declines in sales even when sales actually are stable or even increasing include: irregularities of ordering due to accidents

of the calendar (several dealers may place an order at the very end of the month that would ordinarily have been placed at the beginning of the following month); variations in distributors' inventories which cause their orders to change even while their sales are stable; truly random changes; and sales to ultimate consumers due to accidents of weather, the timing of holidays, and the like. These factors, and others, make it extremely difficult for a businessman to answer accurately the question, "How's business?"

A sales decline cannot be detected speedily by statistical techniques alone. Involved in the process would be: the firm's sales forecast, which would alert a businessman to the possibility of a decline; statements from customers that their purchases are being curtailed; comments from trade association officials or competitors indicating a softening of demand; and some identifiable cause for a drop in sales to your customers' customers—if one is not selling directly to the customer. Because one must rely heavily on qualitative techniques to detect a sales decline—and because such great benefits accrue from speedy detection—management should create a flow of information and establish personal relationships with other members of the trade that provide subjective data which, when combined with statistics, permit one to spot a drop in sales soon after it has started.

DIAGNOSING A SALES DECLINE

After one has established that sales are falling, he must discover "why," if he is to know what to do about it. Two broad types of sales decline can be distinguished: the cyclical type, which results from a drop in general business conditions—and the non-cyclical type. Among non-cyclical sales declines, at least four major types are to be found. First, there is a "compensatory drop." This is a sales decline directly attributable to a sales bulge in the recent past. Second, there is a secular decline, which is probably the easiest type to identify and consists of a progressive and virtually uninterrupted deterioration in sales. Third, there is a drop in sales which can be attributed to no reason other than a change (perhaps temporary) in consumer preferences. Finally, there is what may be called a "derived decline," which is a sales drop resulting from a slump in the sales of the product in which the item in question figures as a component or a complementary product. A timely example would be a decline in most items which enter into residential construction. Thus, we see there are many possible causes for a sales decline. The foregoing

list itself suggests that the price actions appropriate to each one are quite different.

A full discussion of "pricing in a declining market" would include an analysis of methods by which one might identify each type of sales decline and an indication of the most promising courses of action for each. I am obliged to confine myself to one type, the cyclical type, which in itself requires far more discussion than I have time to give. It should be emphasized that a cyclical sales decline is only one of many types and that the things said here—to the extent that they are correct—apply only to this type.

A cyclical sales decline is identified easily only if one's industry is among those which follow general business with quite a lag. At such times, one generally will have heard complaints about the state of business from acquaintances in other fields and have heard many pronouncements as to when business will get better.

On the other hand, some lines of business are precocious and their sales ordinarily slip for cyclical reasons while other peoples' businesses are booming. For such industries, identification of a cyclical sales decline is extremely difficult. As a result, many members of such trades are likely to attribute the sales decline to other than cyclical forces. Clearly, there are no reliable guides for establishing whether an industry is suffering a cyclical sales decline unless one can establish that the economy has turned downward or is about to do so.

To select the most appropriate price actions for a period of sales decline requires, as has been indicated, that one determine the cause of the decline. Thus far, we have discussed only those factors that might cause an *entire industry's sales* to decline. Far more important, especially in the earliest stages of a sales decline, management must establish whether or not their competitors' sales are dropping also. More specifically, they must establish whether or not their *market share* is slipping. If not, a price reduction is far less advisable than it would be if the firm had lost business to its competitors. In the first case, there has been no apparent shift in customers' preferences among alternative sources of supply. A price change would impose both an *absolute* and *relative* drop in sales upon some or all rivals. They could be expected to retaliate vigorously and thereby to eliminate whatever gains might have been achieved from the price reduction. On the other hand, if a firm's market share has declined significantly, a price change might be required to reestablish the former balance of customers' preferences. And, rivals might be expected to suffer a reduction of recent gains more gladly than an aggravation of an already painful drop in sales.

To establish whether a drop in sales represents a deterioration of market position poses all of the difficulties of obtaining up-to-date and comparable information that were discussed earlier. The determination must rest upon a combination of statistical evidence and of clues and conjectures, rather than upon solid proof—but such is the nature of business and so it will always be, I fear.

Let us push our discussion of the diagnosis of a sales decline one step further. We have already considered the problem of establishing the basic cause and of ascertaining whether the decline is general or unique to one's own firm. Consider now the case of a firm whose management has established to its own satisfaction that the economy has turned downward and has depressed the sales of its products in line with the rest of the industry. The diagnosis has not been completed at this stage, for the simple textbook quality of a cyclical downswing rarely is found in reality. A business selling several lines is likely to find that some things it sells are increasing in customer favor while others are slumping. Moreover, even slumping products will occasionally register gains in some regions and through certain channels of distribution—especially early in a general sales decline. These diverse sales movements not only complicate diagnosis of any sales decline, but pose vexing problems in selecting appropriate price actions. Certainly, one cannot set down any rules for pricing items whose sales experience is so irregular. One general observation can be made, however: differences in sales experience by item, region, channels of distribution, etc. create a presumption that price changes should be selective rather than "across-the-board." A seller who yields as much to customers whose purchases are undiminished as to those whose purchases have dropped sharply is choosing simplicity at the expense of profitability. (A parenthetical reference to Robinson-Patman is required at this point, for "selectivity" is a close cousin to "discrimination.")

FACTORS THAT SHOULD DETERMINE PRICE BEHAVIOR DURING A SALES DECLINE

To select an appropriate price policy during a sales decline, a seller requires insight into the attitudes, beliefs, anxieties, impulses, and motives of at least three groups: his competitors, his customers, and his suppliers. In addition, he requires a thorough understanding of the economic characteristics of the product(s) and brand(s) he sells. These four elements—the product, one's competitors, customers, and suppliers—should be allowed to define the course a management elects during a sales decline. Let us discuss them briefly in turn.

Understanding the Product and One's Own Brand

Products are like people in that no two are exactly alike. The characteristics of products for which one is interested in selecting a price policy are neatly bundled by price theorists into packages known by such names as "demand elasticity," "the gap in the chain of substitutes," and the "cross-elasticity of demand." As has been mentioned already, it is vastly more difficult to attach quantitative dimensions to these concepts than to christen them. The businessman's job is to determine the sensitivity of sales to a change in price, to take account of the extent to which consumers can and will substitute other products for his, and the extent to which consumers are loyal to particular sellers and have preferences for particular product features. But these complex characteristics of a product are not all that affect the pricing of a product in the market place; these are concepts that theorists concerned with essentially static markets find useful. When one injects problems of technological change, anticipated shifts in cost conditions, threats to sources of raw material supply, anticipations that newcomers will enter the market, pending patent suits, etc., answers become far more elusive.

There is no escaping the fact that there are great differences in the economic characteristics of products that influence how they should be priced; and, it has been established moreover that some products change their position in the pattern of consumption during cyclical downswings. Reference is made here particularly to the distinction between "inferior" and "superior" goods; a cyclical distinction no less significant is that between "postponable" and "non-postponable" purchases.

The effect of a price change upon the sales of any product—both in the near and more distant future—varies according to the combination of characteristics it embodies. In turn, the different responses to a price change are to be explained largely by the nature and situation of consumers and competitors.

Toward an Understanding of One's Competitors

Business executives must face the fact that businessmen, whether they be one's competitors or suppliers, are people—just like the consumers, about which motivation research is revealing so many unexpected things these days. Only when they have faced this fact will they deal successfully with the major elements in their environment.

One's competitors rarely are homogeneous; some are large, growing, prosperous, and progressive; others are marginal operators who are inexperienced and solvent by only a thread. Between these extremes, one finds all shades and combinations of ability, experience, and financial resources. And apart from the size and financial resources of their firms, top executives differ in personal experience, intelligence, patience, and ambition. For example, some may have had experiences during prior sales declines that would influence strongly how they would react to any subsequent drop in sales. To illustrate, one executive may recall vividly that his firm sustained very heavy losses in, say, 1949, because he was slow to cut price while his competitors cut prices quickly and deeply. This man probably will behave very differently during the next downswing.

Executives vary widely from trade to trade, as well as among firms, and one must understand his own situation rather than deal in generalities. It is not an easy job to figure out one's competitors to the point where one can forecast confidently what they will do once their sales decline. Although it is not easy, it must be done as best one can manage it.

In analyzing competitors, one may gain valuable insights from a study of historical precedents in the trade, if any exist. The value of historical fact and lay psychoanalysis may be considerable, but probably is not nearly as great as the value of a cocktail with others in the trade at a trade association function. It emphatically is not being suggested that one collude with rivals; on the other hand, an alert executive will not fail to learn their thinking whenever the opportunity to do so arises.

It is to be hoped that research will be conducted into the feelings, attitudes, motives, associations and assumptions of businessmen during periods of business boom and slumps. This subject is virtually unstudied and I am in no position to offer answers. To regard one's competitors as disembodied, unfeeling calculators of costs and demand, is almost certain to lead to seriously mistaken behavior.

One must ask himself, specifically, how his competitors would interpret a price decline on his part. Would they regard this as a signal that management is convinced that changed demand conditions call for a price reduction? Or, would they interpret it as an attempt to steal a march on the rest of the trade and gain a temporary advantage? Would a price reduction be taken as a sign that the firm is suffering an acute shortage of cash? Or, would rivals interpret a reduction as evidence that it had suffered a greater sales decline than the others, and its customers might, therefore, be easy pickings? Obviously, the likely interpretation by competitors of any price change must figure as a major determinant of what one does during a sales decline.

Toward an Understanding of One's Customers

The same general type of analysis must be applied to the consumer if an executive is to select an appropriate pricing policy. Would the consumer view a price reduction as a signal to await a general and deeper decline in price? Would he possibly interpret it as evidence that the particular brand whose price is cut has not been popular with customers because of low quality or poor styling? Might he conclude that the firm cutting price has become financially unstable and might not be around long enough to honor any guarantees its product carries? Questions like these require answers before one elects a price policy for a period of declining sales.

Expressed in technical language, the sense of the foregoing paragraphs is that the elasticity and cross-elasticity of demand for most products is likely to change during periods of declining sales. We should be frank to recognize that we do not know the magnitude or the timing of such changes; indeed, we cannot be completely certain that they occur at all. Understandably, a businessman derives very little comfort from the injunction that he should look for changes in demand elasticity during periods of sales decline. He surely craves guidance on where to look, what to look for, how to interpret it, and what to do once he has gotten all available information together. These questions will not be discussed in this talk.

Toward an Understanding of One's Suppliers

In addition to trying to understand how competitors and customers would view a change in price, a person responsible for setting price during a sales decline must take full acount of his suppliers' responses. We think here, of course, only of those suppliers for whom the industry making the price reduction represents a significant customer. One can well visualize that suppliers would become apprehensive about their own sales prospects if a major customer industry were to reduce price, for they would see it as a sign that sales are falling and that their customers may be suffering financial distress. As a result, they might themselves become more receptive to a price reduction; indeed, a price reduction may more than pay its own way by opening the door to price reductions from suppliers. In the case of labor, often the most important "supplier," a price reduction for the products it makes might result in a pronounced increase in productivity.

The foregoing represents only one possible reaction of suppliers to a price reduction—although it would seem to be a likely

one. However, one must admit that what seems likely may prove to be completely erroneous when one studies, as one should, the basic motivation and psychology of labor and of executives in supplier firms during periods of sales decline. For example the price reduction might frighten suppliers into restricting credit and lead them to press for payment of outstanding debt.

Thus, we find that a seller during a period of declining business operates with a triangulated environment: he is surrounded by competitors, customers, and suppliers, all of whom are affected one way or another by whatever he does. Accordingly, he must reason through—and use whatever factual information he can obtain—the probable response of each of these groups to any action he might take. Indeed, he must conjecture about the reactions of the largest individual competitors, his largest suppliers, and his major customers and not simply rely on generalizations about the reactions of each group. Only by this complicated, unsystematic and largely unsatisfying process can one hope to isolate the most promising price policy for his particular situation.

ALTERNATIVE PRICE POLICIES FOR A DECLINING MARKET

There is a limited number of things a seller might do when he finds his sales declining because of a cyclical downturn. His selection among these alternatives should depend upon a fundamental price strategy. A price strategy should take account of both long-run objectives and short-run exigencies. Given the usual perversity of life, these frequently come into conflict.

A fundamental price strategy might call for using a period of sales decline to rid the industry of marginal operators. If so, one might pursue a policy of drastic price reductions initiated quickly and continued until that end has been attained. Or, to take another example, one might want to make the industry one that is recognized as standing for stable prices in the face of up's and down's in demand. Such a policy, of course, would militate against price changes that could possibly be avoided.

Short-run objectives, on the other hand, would include such things as sheer survival; raising cash to meet bills when they become due; discouraging major customers from entering upon the production of the item for themselves (which becomes more likely during a cyclical downswing); beating a price-cutting competitor to the punch; and helping out a customer industry which is having price difficulties of its own.

One must also recognize a medium-run objective that belongs in every general price strategy. The objective of all sellers must

be to restore the market to a stable and profitable condition as quickly as possible. They must do whatever they can to eliminate the hope and expectation of sizeable price reductions. (Note that this end is not necessarily inconsistent with driving marginal operators out of business.)

According to its particular price strategy, each firm must select among the alternative courses of price conduct available. What are its main alternatives during a period of sales decline? First, the company might just "stand pat," no matter what the others do. Second, it might elect to lead the industry by initiating price adjustments. Third, it might elect to follow a particular firm in the industry. Fourth, it might elect to alter prices only as its "direct" or "standard" costs change. Fifth, it might cut its "mark-up," but otherwise continue to base its prices on costs. Sixth, it might forecast what its competitors would do and do the same thing just before they do it. Seventh, it might add strip-down models to its line which sell for less than anything it is offering currently while maintaining its other prices. And finally, it might pursue an intuitive pricing policy about which the less said the better.

Whatever price policy is selected, great skill will be required in its implementation. Specifically, if one assumes the role of a price leader and makes a price cut, the size of the cut and the way it is announced to the trade should imply that any future changes will be upward. One must not convey the impression that it is the first of a long series of reductions. Similarly, if one elects a stand-pat policy, he should not assume the posture of someone who refuses to acknowledge that sales are declining, but rather make clear why he has adopted that policy in the face of a drop in sales and that he intends to stick with it. Actions may speak louder than words, but well-chosen words are not without effect.

Obviously, it is impossible for me to explore the suitability of each of these eight price policies for any given situation. The best solution will vary from case to case according to the particular features of each firm's product, its customers' psychology, its relations with suppliers, and the structure of the markets on which it sells. Moreover, each firm occupies a special position in its industry, so that a policy suited to one company would be foolhardy for another in the same industry.

One generalization is possible on the subject of price strategy: one should be quite conscious and explicit as to what he is about. To muddle through is guaranteed to aggravate the difficulty of restoring a stable and profitable market.

IMPORTANT DO'S AND DON'T'S

It has been implied well beyond the point of boredom that there is no single correct course of price behavior for all businessmen experiencing a sales decline. Each firm's situation is unique to some extent, and a person who is unfamiliar with the peculiarities of its situation cannot prescribe for it in the abstract. Accordingly, our discussion has been confined to essentially four phases: first, the detection and diagnosis of a sales decline; second, an indication of the four major ingredients which should dictate the price actions management should take during a sales decline (these are the uniqueness of the product itself, the "nature" of one's competitors, the nature of one's customers, and the nature of one's suppliers). The third phase of the subject consists of isolating the major alternatives open to those setting price. In that connection, we listed eight possible courses of action, which range from leaving things alone to adding new—generally lower—price lines.

The fourth, and probably most valuable phase of any discussion of business practices and policies, consists of a list of important do's and don'ts. To this we turn now in conclusion.

Things To Do

Determine how much of any price change you might make on products sold through distributors would reach the ultimate customer.

Let distributor-customers know that you are aware of their pricing problems in selling your merchandise and that you will help them meet competitors' price reductions.

Make it clear to the trade that you intend to match any and every price reduction by a "responsible source."

Learn how to resist the temptation to take action just for the sake of doing something. Recognize that in some cases, any change would make things worse.

Be prepared to sustain some loss in market position when the trade is afflicted by distress selling. Sales by firms in desperate need of cash or that have failed altogether cannot be prevented.

Look ahead and never be unmindful of what lies beyond the prevailing sales decline. Beware of actions which meet an existing situation without taking account of their long-range implications.

Things Not To Do

Don't confuse rumors of price cutting for fact. There are times when a telephone call can set things straight and avoid great harm.

Don't ever confuse a drop in your sales with a drop in market share. Unit and dollar sales may decline while market shares are increasing—and *vice versa.* One's price actions should depend far more on shifts in market shares than in unit and dollar sales.

Don't be "trigger happy." Do not allow a decline in sales for a short time to make you panic and take drastic action unwarranted by the situation.

Do not "pass the buck" to your subordinates. Avoid the common practice of browbeating your salesmen and sales managers into making greater efforts to increase sales when the whole industry's sales are dropping. Great pressure on them may lead them to forms of price cutting which you never know about and which can precipitate an extremely costly situation.

Don't exaggerate the importance of price as either the cause or the solution for a sales decline. Recognize that almost all salesmen attribute their failure to close a sale to the fact that they had to charge too much. Price is the favorite scapegoat of the salesman whose sales are slipping.

Don't concentrate on the price of individual items as much as on the price of your offerings as a whole. Often much more important than level of price is the relation among the prices of individual items in your line.

Don't just wait for the "unpleasantness" to blow over or just go away. A sales decline is something that one must deal with in a forthright fashion rather than on a muddle-through basis.

Don't think that you have ever found the right price for all time—or even for a long time. Pricing is recurrent and unending.

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HOW TO USE MARKETING ANALYSIS IN PRICE DETERMINATION

EDWARD A. IDE*

Alderson & Sessions

PRICE, perhaps more than any other economic variable, lies at the heart of economic theory and the management of business enterprise.

Price setting is, of course, one of the most important marketing activities of management. The discernment used in this activity has a marked influence on the accomplishment of the objectives of a business enterprise, be they the maximization of short run profit on individual products, the maximization of total profits, the maximization of the rate of return on investment over time, or conceivably the maximization of market share, employee income, dollar sales, or public esteem, if these be taken as the ends of the business. Whatever objective is established, the level and structure of prices will have an important impact on the degree to which the objective is obtained.

PRICE AND PROFIT MAXIMIZATION

For almost any objective we may visualize a chart (Figure 1) which relates performance with price. Each objective will have its own shaped curve, and in general the maximum of each curve will lie at a different point along the price scale.

The price range in which management can operate is, of course, usually much narrower than that implied in this chart. On the low side (see Figure 2) we have the danger of liquidation to customers

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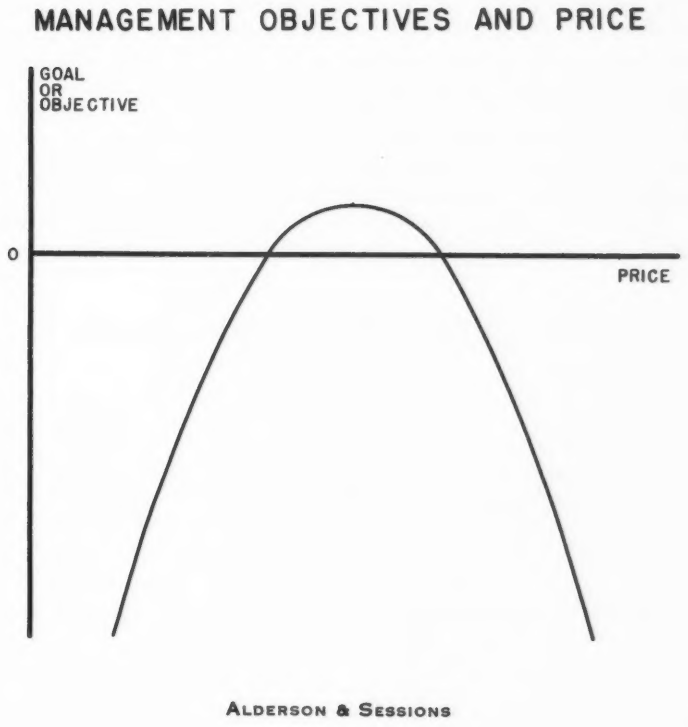

Figure 1

and on the high side the danger of being priced out of the market. Sometimes management is outside the permissible range and doesn't know it. At other times the problem is to find the optimum point within the permissible range.

Price has its impact on profit through its impact on sales. Figure 3 shows a break-even chart with three sales lines corresponding to three price levels. The middle line may be viewed as the present level, and our object is to see the impact of (1) a higher price level which shifts the break-even point to the left, and (2) a lower price level which shifts the break-even point to the right. Profit or loss at any rate of unit sales is represented by the distance between the sales line and the expense line.

Figure 4 shows a situation in which a decrease in price is profitable because at the lower price the profit indicated by the line segment $S_1 E_1$ is about 40 per cent greater than $S_0 E_0$. Note that the volume increase from Q_0 to Q_1 necessary to bring about this slightly increased profit is by coincidence in the order of 40 per cent, or about four times the magnitude of the relative price decrease. If volume had increased only about ten per cent, profit would have been about halved.

In general there must be a marked expansion in volume to justify a price decrease. Whether or not such a volume increase

THE PERMISSIBLE PRICE RANGE

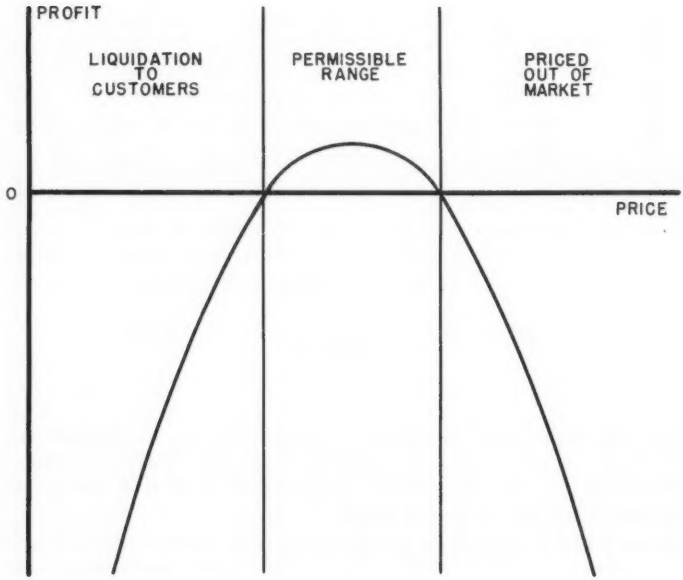

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Figure 2

will be forthcoming depends upon the position and shape of the demand curve for the product or group of products. Our primary purpose this morning will be to suggest some techniques for estimating the location and direction of the demand curve. Price determination should, of course, take account of both demand and cost curves since the optimum price depends on both.

Let us assume that we are able to make linear approximations of both the demand and supply curves within a relevant range, as

BREAK-EVEN CHART
FOR
THREE PRICE LEVELS

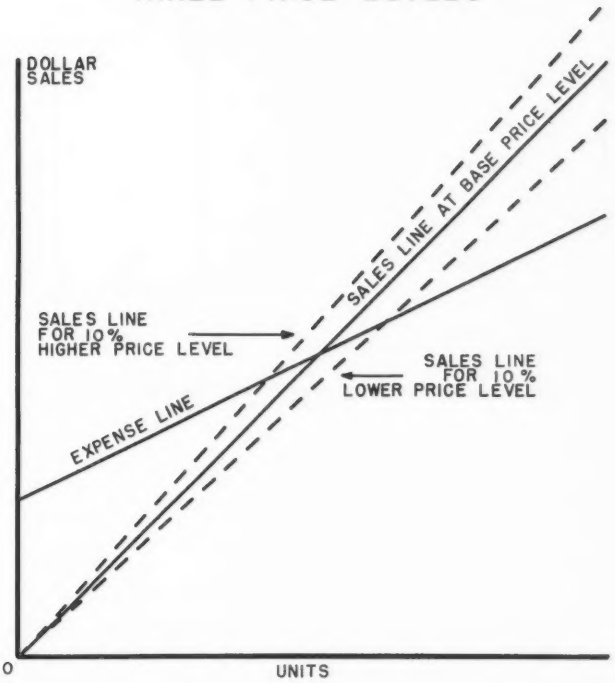

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Figure 3

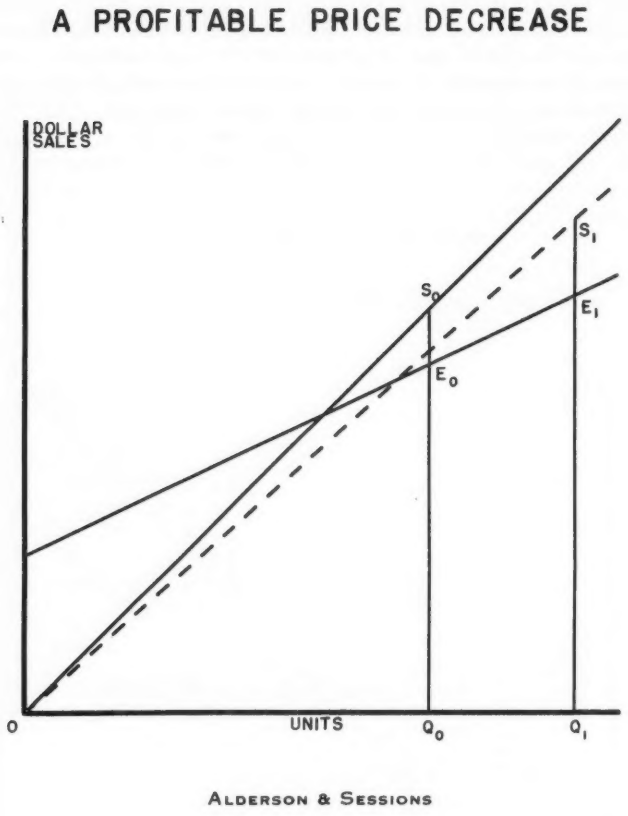


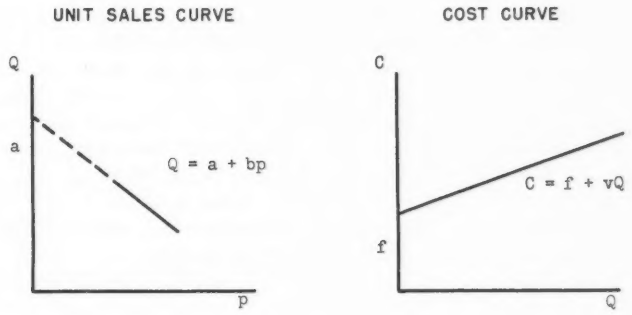
Figure 4

shown in Figure 5. Q represents unit sales; p, price; C, total cost; and S, dollar sales. The optimum price, p_0 which maximizes profit, P, can be computed by the formula shown. Thus, the optimum price is higher in those situations with higher unit variable costs and a flatter demand curve.

QUALITATIVE INDICATIONS OF ELASTICITY

The sixty-four dollar question is the slope of the firm's demand curve in the vicinity of its present price, since in the last analysis far greater uncertainty will reside with the positioning of the demand curve than with the cost curve. The elasticity of demand in the technical sense, as you will recall, can be computed at any point by multiplying the slope by the ratio of price to quantity.

CALCULATION OF OPTIMUM PRICE FROM DEMAND AND COST CURVES



Unit sales, $Q = a + bp$

Total cost, $C = f + vQ$

Dollar sales, $S = Qp$

Profit, $P = S - C = Qp - (f + vQ)$
$= (a + bp)p - f - v(a + bp)$
$= bp^2 + (a - bv)p - f - av$

$$0 = \frac{dP}{dp} = 2bp + a - bv$$

Optimum price, $p_o = \frac{v}{2} - \frac{a}{2b}$

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Figure 5

Price elasticity of minus four means that a one per cent decrease in price is associated with a four per cent increase in unit sales and a three per cent increase in dollar sales. A price elasticity of minus one-half means that a one per cent decrease in price is associated with a one-half per cent increase in unit sales and a one-half per cent decrease in dollar volume.

The slope of the demand curve naturally depends primarily on how competitors respond to a price change. If competitors make parallel adjustments, the demand curve for the firm will tend to reflect the industry demand curve and be less responsive to price. If competitors do not go along with the change the curve may be highly responsive to price. Therefore, the actions of competitors must be forecast if one is to be able to predict the impact of a price change on sales.

Experience is perhaps the best guide to predicting the behavior of competitors. This experience is collected much more rapidly if a firm keeps a journal of prices for its own products and major competitive products. Figure 6 suggests a page form which may be used. After a number of price changes have occurred this record will show strikingly the pattern of competitive price behavior. Changes in package size, deals, product specifications, etc., can be noted on this record for clearer interpretation later. In the absence of such a record or with a comparatively new product one has to rely on previous experience in the industry.

A competitor's price behavior will, of course, be influenced by his cost situation. Estimates of competitors' costs and how they have been affected by recent events may be of material help in predicting price behavior. Suppose, for example, that one has a premium priced product and that he is considering reducing his price so as to reduce or eliminate the premium. How will competitors behave? This will depend partly on how much profit cushion competitive firms have with which to absorb a price reduction.

Let us assume that competitors will respond in such a way that it will be possible to change the price difference between yours and competitive products. What are some of the ways one may obtain estimates of the response of unit and dollar sales? Our thesis is that there is no one way on which we can depend. To be sure of one's estimate, the problem must be approached from a number of different directions. If these diverse inquiries produce fairly consistent results, one has confidence in the general accuracy of one's estimate.

The first, and perhaps the most basic task is to determine the general nature of demand for the product. The elasticity of de-

mand will be intimately related both to the qualitative and quantitative aspects of demand. In Figure 7 I have listed a number of factors which frequently can be taken as broadly indicative of the elasticity of demand. The first indicator stems from the fact that, other things being equal, consumers are obviously going to be more discouraged by a ten per cent price increase in a hundred dollar item than a ten cent item. On the expensive item they will shop more stores and go out of their way to find a better deal. Where the fraction of the family budget consumed by the product is low, the demand will tend to be inelastic, as it will also tend to

PRICE HISTORY RECORD

Initial date	Own product		Competitive products							
			"A"		"B"		"C"		"D"	
	Actual	Per stand. unit	Actual	Per stand. unit	Actual	Per stand. unit	Actual	Per stand. unit	Actual	Per stand. unit

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Figure 6

be when the marginal utility of the product (for reduction in the quantity consumed) is high relative to its price.

The next indicator is perhaps the most important in the list. A reduction in price makes it easier for one to afford a product or brand, and an increase makes it more difficult. If market share relative to lower priced competitive products is not now greater among higher income families who can more easily afford the product, it is doubtful that sales will be increased by making the

QUALITATIVE INDICATIONS OF THE DEGREE OF ELASTICITY

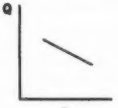
Indicator	 Inelastic	Elastic
Absolute price	Low	High
Fraction of family budget consumed on product	Low	High
Utility relative to price	High	Low
Market share correlated with income	Low	High
Market share of brand	High	Low
Length of time product has been on market	High	Low
Degree to which product confers status by virtue of price	High	Low
Degree to which reasons for product preferences are structured	High	Low
Cost or inconvenience of changing to competitive brand	High	Low
Degree to which brand is selected by an authority	High	Low
Degree to which brand name has become generic	High	Low

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Figure 7

product more easily afforded generally through lowering its price. We will return to this point later.

A commanding market share by itself accords a certain degree of freedom in pricing, and may arise out of a fairly inelastic situation.

When the product confers status on its owner or giver, and where it has the reputation of being premium priced, a price reduction may tend to reduce the psychological utility of the product. Under these conditions improvement in product quality or packaging may be a more profitable course of action than price reduction.

When the product has some important differentiating advantages of which consumers are well aware, when the cost or inconvenience of changing to a competitive brand is great, when the brand has the sanction of authorities such as doctors, or when the brand name has become generic—all these are conditions which contribute to inelasticity.

By checking each of the foregoing factors we are able to determine which products in a product line are likely to have a more inelastic demand than others. We also ought to be able to make rough rankings of elasticity and to place a new product near its appropriate place in the ranking.

We now come to the question of making actual numerical estimates or at least judgments in numerical form of the slope of the demand curve in the vicinity of the present price. In the case of a new product this is equivalent to estimating unit sales at two different feasible prices.

For consumer products there are perhaps three broadly different ways of approaching the problem: Through consumer surveys; through experiments; and through statistical analysis not involving surveys or experimentation. None of the devices is presented as conclusive and most, if used by themselves, would be subject to much criticism. In other words, the correctness or applicability of a given device depends on the context in which it is used and the consistency of the result with other lines of evidence.

CONSUMER SURVEYS

Let us first treat the use of consumer survey results: who is to be an eligible respondent, what questions are to be asked, and how are the answers to be translated into sales estimates? As to the definition of the respondent, the principle question is whether all classes of consumers or only consumers using the product should be interviewed. All consumers should constitute the universe

in those cases where the product is well represented among most groups and where price leadership situations exist so that one must determine the impact on product demand without regard to brand.

The general nature of the demand must be determined to understand the context within which price operates and to assess the factors listed on the preceding figure. Figure 8 shows the topics that need to be covered in one or more surveys in order to obtain the necessary background. In all of this material we look for evidence of price as a factor in brand selection.

It is also desirable to approach the role of price through direct questioning. (See Figure 9) A number of questions can be asked

QUESTIONNAIRE TOPICS FOR DETERMINING NATURE OF DEMAND

- Use of product within family
- Brand used most recently, why tried
- Brands used currently, why tried
- Brand preferred, why preferred
- Brand used previously, why tried, and why stopped
- Experience with subject brand
- Length of time brand has been used
- Questions on specific sources of information or influences that might lead to trial of brand
- Questions on specific qualities and aspects of brand in comparison with competition
- Income, education, occupation, age, sex and other classification data

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Figure 8

QUESTIONNAIRE TOPICS FOR DETERMINING THE ROLE OF PRICE

- Price knowledge questions
- Reactions to price differences that already exist
- Reactions to price changes

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Figure 9

to determine the respondent's degree of price awareness. This area can also be investigated in the case of food products by in-store observation and interviewing.

The respondent's attention can be called to price differences and he can be questioned on attitudes toward products in light of these price differences. Do those who use a premium priced product, who have not tried a lower priced brand, and who are just made aware of the price difference, feel inclined to try the lower price brand? If not, why not?

When eliciting reactions to price changes the direction of the change can be fitted to the respondent's present consumption pattern. Users of a premium brand can be asked if they think they will stay with the brand if the price difference is further increased. Former users of a premium brand can be asked if they would have switched as soon if the price differences had been smaller. Users of regular brands can be asked how they would respond to a price increase in their particular brand while the prices of other brands remain unchanged.

Reactions to existing price differences and to price changes should be related back to the respondents' product experience. In Figure 10 we have classified respondents according to their product and previous use of a product. Note that over-all there

SOURCE OF MARKET FOR PREMIUM AND REGULAR BRANDS

Previous use	Total	Present use		
		Not using	Premium brand	Regular brand
Total.....	1,000	200	300	500
Not using.....	200	150	30	20
Premium brand..	300	30	120	150
Regular brand..	500	20	150	330

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Figure 10

are no shifts in product usage or brand preference. However, consumers enter the market through the premium brand in the ratio of three to two, and only 40 per cent of premium brand starters stay, as compared with 66 per cent for regular brand users. If price is a significant factor, we should find that respondents who switch from a premium to a regular brand show the strongest reactions to price difference and price change questions. The variation in responses between this latter group and the group to its left gives an indication of the validity of the responses.

A suitable pattern of questioning on reactions to a price change will permit us to estimate new counts, cell by cell, and thus build up to new market share and volume estimates based in part on these responses.

From the point of view of questionnaire construction and question wording these areas are among the most difficult. It has not been my intention to go into detail on these problems, but rather to show the structure of the analysis. Suffice it to say that extreme care and much exploratory depth interview research and questionnaire testing are required.

It should also be noted that survey responses are more indicative of the short-run effects of a price change than of its long-run effects. For example, a survey may indicate that holding or increasing the price difference on a premium priced product would be profitable because of a small reduction in market share. However, that small reduction in market share may lead to increased demand elasticity through word of mouth communication and thus to further reductions in market share.

I might also add that up to this point the only controllable variable we have recognized is price. In any real marketing situation there are, of course, a great many others. One of the principal advantages of the survey approach to demand determination is that is identifies other factors and makes possible the development of an integrated marketing program including appropriate pricing.

Where variations in market share by income level are thought to be due, at least in part, to price, it is possible to make a rather simple set of calculations which may give a very rough approximation of the slope of the demand curve. These calculations should be looked on as providing clues rather than answers, and it is with some hesitancy that I set them forth. The first two lines of Figure 11 show the average income and survey frequency at each income level. Estimates of average income for each cell may be arrived at statistically, if necessary, rather than from a tabulation of the survey data as such. For arithmetic convenience, let us assume that the item in question is priced at $1.00. The next line gives the ratio of price to average income. At each of these relative prices we have the number of users of the subject product as shown. Now suppose we make a 15 per cent price reduction, which gives us a new set of relative prices. We then use linear interpolation to obtain a new set of percentages and numbers of brand users. This particular example implies unitary price elasticity since a 15 per cent increase in users results.

In order to keep the example simple, I have ignored the change in the average rate of use by income. Presumably higher income users would use the product more liberally so that the response of sales to income would be greater than that shown. The rate of use factor could readily be put into the calculations. All we would have to do would be to interpolate separately for rate of use, multiply by numbers of users, and compare with the original volume. Thus by ignoring the rate of use factor we have underestimated price elasticity.

The price elasticity may also be underestimated in another important respect. The ratios of price to income lines are indexes of sacrifice, so that the calculation takes into account only

ESTIMATING NEW DEMAND USING INCOME DISTRIBUTION

Item	Total	Under $3,000	$3,000-3,900	$4,000-4,999	$5,000-7,499	$7,500 and over
Average income.....	$5,040	$1,620	$3,550	$4,550	$6,100	$10,800
Number of families.....	3,000	947	382	405	700	566
Price ($1.00)/($000) av. income	.198	.617	.282	.220	.164	.093
Users of product.....	940	140	95	130	265	310
Percent using.....	31	15	25	32	38	55
New price ($.85)/($000) av. income.....	.169	.525	.239	.187	.139	.079
New percent using.....	36	18	30	37	44	58
New number of users.....	1,075	170	115	150	310	330

ALDERSON & SESSIONS

Figure 11

the effect of the change in the level of sacrifice. The reduction in the price also may serve to reduce the moneys-worth of competitive products, so that unit sales may increase more than shown. The magnitude of the increase depends directly on the degree of substitutability, which may also be indicated by survey responses.

For the method to be at all informative for estimating the price elasticity of individual brands, the price calculations must take into account the expected movement of the prices of competitive commodities. This can be done by expressing the price of the subject brand as a ratio to the average price of competitive brands, before and after the price change. Since substitutability across brands is usually far greater than across products, the method illustrated is less useful for arriving at a judgment on market share price elasticity than over-all product demand price elasticity.

The usefulness of the calculation clearly depends on the quality of the judgment with which it is supplemented. Essentially it is

a method of estimating for a product that is purchased more heavily in the higher incomes, the extent to which its market can be broadened from the income effect alone by a price reduction. In any event I throw it out to you as a thought starter and for whatever hints it may provide in particular situations.

The second method of demand curve determination, experimentation, appears at first sight to offer greater promise than the questionnaire method just treated. Theoretically it is possible in an experiment to establish a closer analogue to the ultimate market situation than is possible with a questionnaire. I am sure, however, that all of you who have designed and run experiments will attest to the fact that the establishment of an analogy to an ultimate market situation is by no means an easy task. The problems of reliability, that is, sampling variability, tend to be greater than in the survey approach, because of difficulties in utilizing a sufficient number of experimental sites. In the case of mail order sales, however, these problems disappear to such an extent that elasticity might very well be *defined* as the response of sales in such experiments. For those of you who did not happen to see it, may I remind you that Ted Hawkins' article[1] summarizes the literature on the subject and provides an excellent discussion of the problems of test construction and interpretation.

The third method of demand curve determination I have labelled statistical. We are talking in part of multiple regression analysis of price and other economic data over time or across space. For example, in one assignment where we needed to determine the demand curve for gas for domestic heating, we found it quite helpful to obtain regressions relating gas space heating saturation in different communities to the price of gas in these communities.

In the statistical or multiple regression approach we are trying to make the maximum use of sales and price history. One method of accumulating a price history was illustrated earlier.

Throughout this paper we have discussed "price" as if we were referring to individual prices. However, when we attempt to calculate optimum price levels using cost curves as illustrated earlier, in general we are not talking about individual prices but rather about prices averaged over a number of relevant commodities. Likewise, quantity is not a simple count for a single

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1. Edward R. Hawkins, "Methods of Estimating Demand," *The Journal of Marketing*, Vol. XXI (April, 1957), pp. 428-38.

commodity but rather quantities converted to some standard unit. In constructing these averages we are faced with many of the problems of index number construction, including choice of weighting scheme and sample size. It is not my intention to go into these problems today.

In this paper we have suggested some ways of approximating the demand curve for a company's product. Once we have this approximation in conjunction with an approximation of the cost curve we are able to estimate optimum price. On the subject of determining cost curves I would merely like to plead for the inclusion of marketing or distribution costs which heavily affect variable costs. In many situations the optimum price has been found to be considerably higher or lower than it was thought to have been prior to the inclusion of distribution costs. How the optimum price, in turn, depends on variable costs was shown in the simple formula presented earlier.

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23

WHERE DO WE STAND ON TRADE DISCOUNTS?

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A TRADE discount, stated most simply, is any price reduction given to a particular purchaser because of his position in the channel of distribution of the product purchased. A discount given by a manufacturer to retailers, but not to consumers, is therefore a trade discount. Similarly, a discount offered to wholesalers, but not to retailers, would be a trade discount. The fact that such discounts serve as a method of compensating middlemen for the performance of marketing functions is too well known to require explanation.

We ask the question "Where Do We Stand on Trade Discounts," because the Robinson-Patman Act of 1936 has had the effect of casting some doubt on their legality. The Robinson-Patman Act, it will be recalled, prohibits a seller from discriminating in price between two or more purchasers under certain circumstances. As a federal statute, it applies only to sales in interstate commerce. The Supreme Court of the United States has not been niggardly in its interpretation of the term "interstate commerce." Most wholesale transactions, consequently, are either in interstate commerce or affect interstate commerce to such an extent that they are governed by the Robinson-Patman Act. "Where Do We Stand on Trade Discounts," is, therefore, both a pertinent and timely question.

Trade discounts were not specifically mentioned in the Robinson-Patman Act. However, since they involve charging a lower price to some customers than to others, they might conceivably fall within the prohibition against price discrimination. The Act,

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however, did not enjoin every act of price discrimination, but only those which injure or harm competition.

Assuming that trade discounts constitute price discrimination as this term is used in the Act, the next question which arises is whether such discounts adversely affect competition. If the answer to this question is in the affirmative, the only conclusion possible is that trade discounts are illegal. Fortunately, however, the answer is in the negative. True trade discounts do not injure competition. This fact can be illustrated by the use of an example. Let us assume that a manufacturer decides to grant a discount of 40 per cent and 20 per cent from retail list price to wholesalers, but only 40 per cent from list to direct-buying retailers. If the seller offers the same discount to all wholesalers and the same discount to all retailers, no injury to competition can result since the direct-buying retailers and the wholesalers are not in competition with each other.

As a general principle, therefore, a seller who grants a trade discount to all purchasers who compete with each other does not violate the Robinson-Patman Act when he refuses to allow the same discount to a customer who does not compete with those receiving the discount. The Federal Trade Commission and the courts have continually insisted upon differentiating between wholesalers and retailers on the basis of the "character of their selling." Retailers are said to be those who sell only to ultimate consumers, while wholesalers are deemed to be those who sell only to retailers or to business users. Purchasers identified as wholesalers under this test do not, by definition, compete with purchasers designated as retailers. Consequently, a trade discount granted to wholesalers, but denied to retailers, or a trade discount available to retailers, but not offered to ultimate consumers, would not be likely to injure competition.

Few firms in today's business world fit neatly into this twofold classification of retailer and wholesaler. Many wholesalers sell not only to retailers and industrial buyers, but also to friends, business associates and even to the general public. Similarly, many retailers sell not only to ultimate consumers, but also to other retailers and industrial consumers. A deeper insight into the current legal position of trade discounts is, therefore, required.

Sweeping aside the technicalities and side issues which have confused the subject for many years, it is possible to state a few relatively simple rules regarding the status of trade discounts under the Robinson-Patman Act. These are:

Neither the Robinson-Patman Act nor any other state or federal

law in effect today requires a seller to grant trade discounts. The seller is, therefore, free to decide whether he will grant such discounts or whether he will follow a "one-price" policy.

For the purpose of qualifying for trade discounts, purchasers must be classified on the basis of the type of customers to whom they resell. All purchasers selling or seeking to sell to the same customers must be included in the same classification. The fact that they may perform different functions is immaterial. Thus, a desk jobber and a full-service wholesaler, both buying from the same manufacturer and reselling to retailers in the same market, must be equally eligible for trade discounts granted by the manufacturer. Trade discounts may not be accorded to one purchaser and denied to another simply because they operate in different ways.

It is frequently possible to have several different wholesaler classifications, the members of each classification selling to different customers. In the automotive parts industry, for example, some purchasers may be identified as distributors or superjobbers, while others may be termed wholesalers or jobbers. The distributors sell to jobbers and the latter sell to service stations, fleets, etc. Distributors and jobbers are not in competition with each other, and may therefore be assigned different classifications. In the grocery industry, to cite another example, some wholesalers may be classified as institutional distributors and others may be designated as regular wholesalers. The institutional distributors resell to hospitals, restaurants, schools and industrial cafeterias. The regular wholesalers resell to food retailers. Since these two wholesalers serve different customers, they may be given different classifications and granted different trade discounts.

If a particular classification includes different types of marketing institutions, the size of the trade discounts to these different types of middlemen may vary with the costs incurred by each of them in handling and selling the product in question. As noted above, a manufacturer selling to both a drop shipper and a full-service wholesaler in the same market cannot deny trade discounts to the drop shipper while offering such discounts to the full-service merchant, assuming that both resell to the same customers. However, he can vary the size of the trade discounts he grants to each of these two types of middlemen with the average costs each is likely to incur in handling and selling the particular product.

For the purpose of qualifying for trade discounts, split-function purchasers may not be classified as either wholesalers or

retailers, regardless of the predominance of either wholesale or retail activities. Such purchasers may receive wholesale discounts only on goods actually sold at wholesale. Each transaction must, therefore, be treated separately. Responsibility for assuring that trade discounts are not given on goods which are resold in competition with goods on which trade discounts were not granted rests strictly on the seller.

And finally, the size of trade discounts should be related to the average costs incurred by each type of wholesaler handling and selling the particular product. Since it is impossible to vary trade discounts with the exact expenses sustained by individual middlemen, such discounts should not significantly exceed the costs incurred by the "average" merchant of the type to which the purchaser belongs. This means that a seller may not grant trade discounts which are so large that he knows, or has adequate reason to believe that the recipient will pass them on, in the form of price reductions, to his own customers.

The above rules do not provide guidance on all questions which may arise in the course of establishing and administering a trade discount policy. These rules, to be sure, oversimplify a highly complex subject. However, in oversimplifying intricate legal decisions, it is hoped they provide a useful tool for the executive uninitiated in the esoteric idiom of the legal profession.

24

THE DYNAMICS OF THE PRESENT

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Carson Pirie Scott & Company

IT seems to me that we should first explore some of the historical patterns of the distributive industries—I am now referring to the retail industry—and the basis on which corporate or individual competence has been built. Some of these patterns are not too complimentary to the distributive trades.

Certainly one of the hallmarks of the retail distribution, not only of the poppa and momma stores, but also of the large mercantile establishments such as ours, was the use, in the years past, of a low standard of monetary income for employees. I think I can say this without refutation. Possibly some of the men who have been in the retail industry for a number of years might deny it and talk about the meaninglessness of today's dollars as against the dollars in 1920. However, I think there is no doubt from the standpoint of statistics that one of the reasons for relatively profitable distribution in years past has been the low cost of the labor segment of the distributive product.

That has vastly changed today. Instead of paying people $6, $8, $10, $12 a week, wages in most retail operations are now, in considering the annual rate of pay, not too disgraceful. In Chicago, for example, we have the second highest rate of retail pay of any major city in the country, San Francisco being the first. Our annual average rate of pay for our associates, when you consider the guaranteed annual wage, will run somewhat in excess of $3,100, $3,200.

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This is not high, you say, from an industrial standpoint, but you must remember these people I am talking about are guaranteed 52 weeks of work per year. We don't shut down for tool change-overs or for inventories. We keep going. I think that many times the fact is overlooked that in this industry we have had almost a guaranteed annual wage for a long, long time. Things that the unions are still fighting for, from the standpoint of holidays and vacations, have been accepted in retailing as standard practice for a number of years.

The reason I comment about this is that in looking at what today's dynamic changes are in the distributive segment of our market, this, to me, is one of the real challenges and one of the real problems of the traditional way of thinking, not just so far as the mercantile stores are concerned but so far as all retail operations are concerned.

Some people are still resisting the fact that they should now meet the fair labor standards rate of pay, even though they are not under it. The competitive forces of today's labor market require they do that if they are going to stay in business.

I think another factor in the distributive pattern that we have to look at and explore very carefully—and this is a real problem for folks in manufacturing and the marketing business—is that there are relatively few Carson Pirie Scots and relatively few J. L. Hudsons and Crowley Milners. We dominate by name but we do not dominate by volume. The amount of business that is done in large emporia like ours is, relatively, a small segment of the total retail business. The greatest number of customers with the greatest number of dollars are doing business with a relatively small retail distribution unit.

This is a very important historical concept. It is an historical reality. It is a reality today that the greatest bulk of retail distribution in America is done through the small store, the store that has one or two, up to twenty-five to thirty employes. This makes it not a simple, neat package like a big industrial production unit might be, producing one type of product. This makes it a multi-faceted operation, about which no man can speak authoritatively and with sureness that what he says about his particular segment of distribution is true of all segments of distribution.

Another factor that I think we have to explore before we discuss the dynamic changes in today's market is the fact—and this may sound very strange to you—that we are living in an area of complication so far as inflation and taxes are concerned. This is a matter that affects all distributive units, just as it affects all manufacturers. This matter of inflation has had, I think, a very

profound effect upon certain segments of our smaller retailers, as well as certain segments of the larger retailers. The inflation of prices so far as cost is concerned means that many of these people, without knowing it, have had to plow back their profit dollars into their business in the form of inventory, rather than in the form of improvement of property and services.

A great many of these smaller retailers, and a great many large retailers, are not necessarily those who go to banks for money. The only reason they keep books is because there is a requirement by the Internal Revenue as to taxes they have to report.

The important factor is that many of these people are not aware that the reason they have not improved their services or their facilities is simply that they have never paid any attention to their cash flow. In fact, they don't know what cash flow is. They just know they are short of money and they are not going to put in the new fixtures or they are not going to expand their property, but why, they cannot tell you. It is because of this inflationary force.

This has happened to big business, but not to the same degree. Big business with its highly professionalized and specialized staffs has said, we will get a good financial man. In our own business, we did not have a top financial man, a man who was, as my son would say, really "hep" to the financial facts of life, until eight or nine years ago. We suffered because this concept was lacking in a family-owned operation. The families would be the first to admit this.

We were living in a day when the inflation of the dollar was going into the increase of the cost of inventory and into the increase of cost of business, not into the basic movement or the renovation of our main plant. Only when we began to discuss money, to use full cash flow, did we find the situation rectifying itself in our business.

This is generally true in retailing. The average retailer is an entrepreneur who believes basically, not that this is an opportunity to make a magnificent living, but rather that he wants to be his own boss. He makes these adjustments to the market conditions without knowing why he makes them; and many times, failing to make adjustments, he is out of business.

I think the tax situation is one of the real factors that should encourage a younger man to go into smaller retail distribution, and probably discourage him from going into the larger segments of retail distribution, like department stores.

Taxes today are a real problem, so far as the retail market is concerned. In the first place, let's take corporate income tax. In a corporation like ours, it is very difficult for us to get by without paying our 52 per cent rate. This is one of the real problems in the whole middle area of retailing. We have to make a dollar, operating-wise, before we make 48 cents to put back in the business. And there is not much that we can do as a big operation to adjust this.

The middle-size and smaller operations (by middle-size I am talking about the retail operations between $2, $3, $4 million) are much more flexible than that. I think this is one of the reasons for the great growth in certain cut-price competition. We have shareholders. We have insurance companies and banks that we must satisfy. They are satisfied only by earnings. The smaller companies generally do not have banks or insurance companies and shareholders to satisfy. They have only themselves. So far as they are concerned they are pretty astute and pretty shrewd and calculating just how far they can go in cutting their price, in order to come out right.

Incidentally, if I were in their business, I would pursue exactly the same course, because it would be possible for me in that size business to make a reasonably good living over and above what income I might tacitly draw from the business as a salary.

I submit to you that in the light of these points I have made, none of which are profound, we are seeing many of the dynamic changes that are occurring in the distributive setup today.

There is a lot of idle talk about the fact that the individual distributor or retailer is going out of business, that he is disappearing in numbers. This is deceptive talk, because he is not. This is what we would like to think, what many manufacturers would like to think, because it would simplify their whole problem of distribution and marketing. However, this is not the case.

In our area we have many new shopping centers. Incidentally, many of the businesses in the new shopping centers are new businesses, entrepreneurs starting for the first time. Of course, many are not; they are national operations. But as we look over the suburban areas and study them, we see no cessation of building of small retail facilities, and there has been no cessation of the use of those small retail facilities as new entrances into the field of distribution.

Twenty years ago Bill Benton decried the fact that young men were no longer going into their own businesses, that they were going into corporations. In the retail business you have a very unusual situation. During the last five years we have lost, I would

say, 12 to 15 of our good department management level people on up. We did not lose those people to other big corporations; we lost those people to their own ambitions, to the fact that they wanted to do what Mr. Carson, Mr. Pirie and Mr. Scott had done a hundred years ago. They wanted to go into business for themselves.

In retailing we have this unusual situation, unlike manufacturing. You can go into business with little or no capital of your own. You can always find a speculator in real estate who will put you in business with a reasonable lease term. If you have been in business with a big company, you know the manufacturers who will put you on the cuff for 60 days. When you are on the cuff for 60 days in certain lines of the retail business you don't need any money, because your stock turns over nine to twelve times.

So there is no cessation of the vigorous young person going into the retail business for himself or herself. This is a constant process. It has been historical, and it is going to continue to be a reality in this market. One of the uncertainties of this situation, of course, is a part of the guarantee of our private enterprise system. These people not only have the right to succeed, but they also have the privilege of failing.

We have not gone through quite enough rolling adjustments. Believe me, if you are at the bottom of a rolling adjustment, it is a depression. The other guy might be driving a Cadillac, but if the time payment man is knocking at your door wanting last January's payment on your store fixtures, brother, you're in the middle of a depression, and not a rolling adjustment.

The important thing is that we have not had too many rolling adjustments. They are increasing, in my opinion. This is one of the great uncertainties about the dynamics of the present retail market. They are generated by tight money which causes manufacturers and distributors to say to the retailer, we can no longer give you 60 days; we are lucky to give you 10 days, and we are going to have to have our money.

This is not a general trend yet, but one of the dynamics of the situation, I think, is that we do not know what our collection experience would be on accounts receivable in a time when money is tight for individuals. In Dayton, for example, 6,700 Frigidaire people have been laid off. You do not feel this effect for 30 days or 60 days, because even on the 30-day accounts there is a tremendous dragover. I think about 20 per cent of the so-called 30-day accounts are 90 to 120 days past due. This is one of the uncertain dynamics of today's market.

I have overlooked the stating of my fundamental belief. To me,

everything we do, whether it is marketing or advertising, buying a business or selling a business, goes back to a very simple "How can I use my money best?" This is a very important outlook that cannot be overlooked in today's retail market.

There is the tremendous upsurge in the building of shopping centers and of new commercial districts outside of shopping centers. The theory on the part of speculators and insurance companies was that here is where we can use our money the best. This is a very fickle situation, and has changed and can change very rapidly. There may be other areas where we can use our money better.

If a fellow goes into business for himself and very glibly makes what he calls to his wife and neighbors "a killing," but finds there is not the return on his time and capital that he thinks there should be, that is the same thing as converting a stock into a bond, or a bond into a stock. He suddenly says to himself, "I can do better by going to work for General Electric than I can do for myself." So he converts his assets into money, because he feels that he can get a greater return on his time, which is money to him, and his money by working for someone else.

We did not decide to go into branch stores four years ago and build five since that time simply because we wanted to run branch stores. We wanted to have our name maintained in the community, but we decided we were not getting the right kind of return on our invested capital downtown; it was that simple. We decided here was a new and fallow field in which we could convert some of this money, downtown inventory, accounts receivable, and earn a greater percentage of profit. Up to the present time that has proved true.

Now, let's not deceive ourselves as to the dynamics of the situation today, the fact that the return on the invested capital downtown might ultimately become better. When a Morris B. Saks moves from his traditional outlying areas downtown, this is important. Mr. Saks is saying the reverse of what we have said, and he may be right. He may bring to our downtown area a whole new concept of how do I get a greater return on my invested capital? We probably can learn a lot from him if we are not too stuffy about it.

Winkelman's in Detroit went downtown. This is interesting. They went downtown not to protect their good name, nor did Mr. Saks move downtown to protect his good name. He may have thought that, but that wasn't really the reason he did it. He wanted a better return on his invested capital, his inventory, his accounts receivable, and his investment in the fixtures.

This has a very real bit of dynamite for the whole distributive situation in America, this fickleness of return on invested capital. This is a point on which we cannot overlook the dynamics of today.

Sears and Roebuck—this is not a matter of record, and I don't know that these figures are entirely accurate—are returning 15 per cent on their invested capital. Last year we returned about 7.1 per cent on our invested capital. Many publicly held retail operations in America are returning 3 and 4 per cent on their invested capital. I submit to you that the use of the invested capital in dynamic marketing cannot be tolerated where it only earns 3 or 4 per cent. Those stores, large or small, ultimately have to go out of business, because money needs a higher rate of return.

This is an unorthodox approach for a retailer. As I said at the start, we have to take into consideration not only the historical perspective, but also the use of the basic factors which go to make up our whole economy, of which money is one.

I am going to close with two or three of what I think are pretty basic factors in the present dynamics of retailing. In retailing you will see a much greater emphasis—and you are seeing it now—on the use of space, depending on the amount of dollars you have invested in space. I have made this statement several times before different marketing forums and people have been shocked. However, on State Street today we have over a million square feet of under-used department store space, and that excludes the New Boston store which went out of business a number of years ago and is now being used for office space.

Taking a reasonable occupancy and rental and tax cost on that, of $1.50 a square foot, that means we have on State Street in Chicago, from Congress on the south to Lake Street on the north, an over-assessment on the production of profit by department stores of a very great amount of money annually.

One of the really important points—and I think one reason why shopping center construction is slow—is that those of us who are in the retail distribution have to begin to think about how we can afford to pay more per square foot. After all, the cost of real estate in retailing is basic. This is a fixed charge. If the cost of real estate goes up to $2 a square foot annually, we have to decide how we are going to merchandise that better so that we can get the same rate of return on the $2 cost space that we get on $1.20. This cannot be done overnight.

Tied into this is the higher cost of labor, which I mentioned earlier, in a traditionally low-pay industry. Wages are getting higher and higher because we have to stay competitive with the

labor market. Therefore, you hear a lot of talk about self-selection, and self-service. Well, let's not deceive ourselves. The reason for all this is because labor costs have gone up. We are not only concerned about the fact that Mrs. America likes to select it herself, we have to keep this labor cost and selling down to 6 or 6-1/2 per cent.

I would like to have you think that we are geniuses in our business in going to self-selection and open fixtures, and that sort of thing. Sure we're geniuses, but we are geniuses under pressure, and there is a tremendous difference. Many times, when you are geniuses under pressure you don't do, in a relaxed way, the thing that comes naturally.

Another factor that I think we are going to have to spend more time and money on, and I think all of us are doing it to a limited degree, is more qualitative, rather than quantitative, analysis of our markets. I think there used to be a lot of emphasis on the fact that 300,000 people with an average income of $4,000 a year lived within 10 minutes driving time of our store. This is why we built a store. Yet we wondered when we set our store there why it didn't succeed.

The thing we failed to look at was that we just took the statistics and not the human being. We didn't know what that human being thought of us as an operation. This is what throws many small retailers. They don't know there is such a thing as market analysis or surveying consumers' desires and habits. Many times, they don't know how a consumer is motivated. This is important. In our retail picture today, I think you are seeing more of this qualitative approach.

I am sure—and I don't know whether he or anyone else would agree with me—that Sol Polk, who has been an outstandingly successful retail distributor, and who is a thorn in our side (talking about the big operations), is spending more time thinking about his market than he did two, five, or ten years ago. Why is that? Because he is getting all of the built-in inflexibilities that you get when you get over $2, $3, $4 million.

It is amazing how excess weight, corporately or on your body, cuts down your circulatory prowess. You have to pay attention to this. In other words, you will have to reduce scientifically, not just because you want to reduce.

The last thing I would like to say is that I think too many of us in the department store business particularly,—and I think fellows like Sol Polk knew what they were doing—have been double-talking about what we say is our place in the market.

I don't know what our place in the market is. This is an

indicting statement for a general manager of the business. However, I know we are trying to find out what our place in the market is. But I am sure of one thing: that the woman who wants to pay $199.95 for a dress that she is going to wear once, is not going to buy that dress at Carson, Pirie, Scott & Company, because she wants a name on that dress other than that of a department store. So Carson, Pirie, Scott & Company in its concept of the better dress department should not fool itself that the $199.95 customer is going to make its business. We have to find out where the price line is, where the customer stops being appealed to by a good, friendly aggressive, middle-class store; and that is what we are if we really want to be honest about it. I think we are hitting the band below the middle class, the middle class, and a little above the middle class.

This to many of our merchants is heresy. However, to those of us who have to watch the general management of the business and have to watch where we are going to set up our next store, and how we will use our money intelligently, this is important.

One of the real dynamic factors in today's retail market—and the effect of it is untold—is that many of us, for the first time, are trying to find out where we belong. We were like Topsy; we just grew. Now we are adults and we can vote and we have got to find out whether we are going to be Republican or Democrat. This is painful, but we have to find out.

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THE GROCER'S STAKE IN NEW PRODUCT INTRODUCTION

ANTHONY G. CONN*

ACF-Wrigley Stores, Inc.

THE grocers stake in new products is his investment in personnel, advertising space, time, money, and most important, valuable shelf space. To make our investment pay off, the new product must give us plus sales which will eventually become more net dollars.

What then do we look for when presented with a new product? What are the factors that enable us to return our investment with additional sales? First of all, we must determine whether there is a need for the product. And secondly, whether merchandising and advertising can motivate its purchase. Then, are the manufacturer's promotional plans adequate by our standards? We must also be sure that we are giving the housewife value, and that the product is packaged so that the value is evident and a desire to buy is created.

If the product passes these tests, we must go one step further. There is a concept that "marketing begins and ends with customers." To the manufacturer, we are the customer, therefore the new product must meet our needs. We must be convinced that a new product will mean additional sales, not merely substitute sales. We must be sure that our dollar investment will bring us the dollar returns we want, and that the product will not handicap our normal profit structure. We must be assured that the manufacturer's advertising and promotional plans are long range, so that the product will not die on our shelves. Most important, we must have sufficient faith in the product to give it valuable shelf space. Once we do, each linear foot it occupies should give us

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more dollar returns than the product it replaced. In other words, we have to move the product in quantities.

As you can see, our analysis of a new item is twofold. Does the consumer want it? And do we want it? Our success depends on satisfying the mass of consumers. We can sell some quantity of most things, but we must be selective so that we do not jeopardize our economies, clutter our shelves, and limit our merchandising. By being selective we perform a service for customers, and that is passing on the economies achieved through this approach.

We know that manufacturers make extensive consumer tests before introducing their products. They use psychologists, consultants, and analysts to formulate marketing plans. We welcome the results of their tests as a guide to possible consumer reaction in our area. But, we often wonder why we, the manufacturers' customers, are by-passed in these analyses. Why aren't our desires taken into consideration? Instead, the manufacturer attempts to sell us an introductory program that seldom meets our needs.

We, as the liaison between the manufacturer and consumer, are closer to the consumer. We satisfy her wants with innumberable products. Consequently, we are in a position to help the manufacturer with his marketing plans, to advise him on timing, consumer motivation, advertising, packaging and pricing, once need for the product is established. Our proximity to the consumer gives us fundamental knowledge, which, when passed on to the manufacturer can make the difference between success and failure in the introduction of a new product. If there is any doubt in our mind as to the potential success of a new product because of its marketing approach, it does not become a product in our stores. However, if the product satisfies a need, has value, carries adequate advertising and promotion, returns us a fair profit, and adds to our total sales in quantity, we welcome it.

If we are to continue to give the consumer more new products for which she has an unconscious need, we, the retailer and the manufacturer, must work together to make the consumer cognizant of the need, and thus make the product a demand item.

Part Two

Marketing Research

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THE PATTERN OF SOCIAL CLASSES

PIERRE D. MARTINEAU*

Chicago Tribune

SOME few years ago, the social anthropologist, Lloyd Warner, then of Harvard and now at Chicago, described the social class system prevailing in America. As he stated, all societies place emphasis on some one structure which gives form to the total society and integrates all the other structures such as the family, the clique, voluntary association, castes, age and sex groupings into a social unity. Social stratification means any system of ranked statuses by which all the members of a society are placed in some kind of a superordinate and subordinate hierarchy. America has subscribed to a political ideology that all men are politically equal. Vaguely we do sense that the economic realities impose some sort of ranking. However, Warner indicated that while money and occupation are important in the ranking process, there are many more factors and in themselves these two alone do not establish social position. The concept of social class was designed to include this process of ranking people in superior and inferior social position by any and all factors.

Our behavior on this subject is ambivalent. Because this notion of equality is so deeply instilled into all of us, we typically reject any formal discussion of socialy inequalities. In my own experience, the mere explanation of social class is sufficient to arouse very evident hostility from the typical audience, since the explanation carries with it the implication that somebody may be superior to the individual.

And yet, even though we never openly discuss the subject, even though we never bring ourselves to be logical about ranking

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ourselves, all of us are vaguely aware that we behave and think and aspire more like some people than like others. We cannot imagine ourselves being close friends except with certain groups, and we are more comfortable with them, precisely because we do have the same general values and viewpoints. Warner insistently distinguishes between the objective phenomena of class position, such as income and occupation, and the subjective criteria involving attitudes and style of life.

It has been argued that there cannot be a class system existent in America when the individual is so blank about it, when he hasn't the slightest idea of its formal structure. Yet in actuality every individual senses that he is more at home with and more acceptable to certain groups than to others. In a study of department stores and shopping behavior, which I will develop later, the lower status woman is completely aware that if she goes into high status department stores the clerks and the other customers in the store will punish her in various subtle ways.

"The clerks treat you like a crumb," one woman expressed it. After trying vainly to be waited on, another woman bitterly complained. "Oh, we thought you were a clerk," she was told loftily.

The woman who is socially mobile gives considerable thought to the external symbols of status, and she frequently tests her status by shopping in department stores which she thinks are commensurate with her changing position. She knows that if she does not dress correctly, if she does not behave in a certain manner to the clerks, if she is awkward about the proper cues, then the other customers and the clerks will make it very clear that she doesn't belong.

In another study, we found very different attitudes in the purchase of furniture and appliances involving this matter of status. Middle class people had no hesitancy buying refrigerators and other appliances in discount houses and bargain stores, because you can't go wrong with the nationally advertised names. But taste in furniture is much more elusive and subtle because the brand names are not widely known, and therefore one's taste is on trial. Rather than commit a glaring error in taste, which would exhibit an ignorance of the correct status symbols, the same individual who buys appliances in a discount house retreats to a status store for buying furniture. She needs the support of the store's taste. What I am saying is that in a very real sense all of us in our consumption patterns and style of life show an awareness that there is some kind of a superiority-inferiority system operating, and that we must observe the symbolic patterns of our own class.

On the basis of his studies, Warner described a six-class system: The Upper Upper or old families; Lower Upper or the newly arrived; Upper Middle, mostly the professional and successful businessman; Lower Middle or the white collar salaried class; Upper Lower or the wage earner, skilled worker group; and Lower Lower or the unskilled labor group. For practical purposes in order to determine the individual's class position, Warner worked out a rating index based not on amount of income, but rather type of income, type of occupation, house type and place of residence.

Although the Warner thesis has been widely used in sociology, it has not generally been employed in marketing. There have been numerous critics, as a matter of fact, in the social sciences who held that since Warner's thesis rested essentially on studies of smaller cities in the 10,000-25,000 class, they were unconvinced that this same system existed in the more complex metropolitan centers, or that it could be unravelled by the same techniques. Furthermore, marketers did not see the application of this dimension to the individual's economic behavior, since the studies of Warner and his associates had mostly been concerned with the differences in the aspirations and dreams, the broad patterns of living, the moral codes, etc.

Under Warner's guidance, the Chicago Tribune has undertaken several extensive studies exploring social class in a metropolitan city, and its manifestations specifically in family buying patterns. We wanted to see if such a social class system did exist in Metropolitan Chicago, if the dimensions and the relationships were at all similar to the smaller cities which were studied before the far-reaching social change of the past fifteen years. We further wanted to see if there were any class significances in the individual family's spending-saving patterns, retail store loyalties, and its expressions of taste in typical areas such as automobiles, apparel, furniture and house types.

It has been my experience that the economist and the psychologist overlook the possibility of any psychological differences between individuals, resulting from different class membership. I could be wrong, but it is my impression from countless discussions that the economist assumes a rich man is simply a poor man with more money, that given the same income, the poor man would behave exactly like the rich man. I believe our studies do crystallize the wealth of evidence from other sources which show that this is just not so—that the lower status person is profoundly different from the middle class individual in his mode of thinking and his way of handling the world.

I am sure at the outset it is understood that there are no hard and fast lines between the classes. Implicit in the notion of social class in America is the possibility of movement from one class to another. The "office boy-to-president" saga is a cherished part of the American dream. Bobo Rockefeller illustrates the female counterpart: from coal miner's daughter to socialite. As a corollary of our studies in class, we also tried to be definitive about the phenomenon of social mobility—the movement from one class to another.

Let me say there are numerous studies of vertical mobility from the level of sociological analysis, mostly done by comparing the individual's occupational status to that of his father. There are also studies at the level of psychological analysis. We hoped to combine the two levels, to observe the individual's progress and also to understand something of the dynamics of the mobile person as compared to the stable individual. We tried to look both backward and forward: tracing such factors as occupation, place of residence, and religion, back to parents and grandparents, and then, where the family expected to be in the next five or ten years, and what were the educational plans for each son and each daughter.

Because our work on mobility is still incomplete and because I want to confine this paper primarily to social class, let me conclude this by saying that we are also trying to relate a spending-saving analysis to the factors of mobility-stability. These are Warner's hypotheses and assumptions for our study:

ASSUMPTIONS ABOUT SYMBOLS AND VALUES AND ABOUT SAVING OF MONEY AND ACCUMULATION OF OBJECTS

We are an acquisitive and pecuniary society. On the one hand, the values and beliefs of Americans are pulled toward the pole of the accumulation of money by increasing the amount of money income and reducing its outgo. On the other hand, our American values emphasize the accumulation of objects and products of technology for display and consumption. The self-regard and self-esteem of a person and his family, as well as the public esteem and respect of the valued social world around the accumulator, are increased or not by such symbols of accumulation and consumption.

The two sets of values, the accumulation of product symbols and the accumulation (saving) of money, may be, and usually are, in opposition.

General working hypotheses stemming from these assumptions:

People are distributed along a range according to the two value components, running from proportionately high savings, through mixed categories, to proportionately high accumulation of objects.

These value variations conform to social and personality factors present in all Americans.

ASSUMPTIONS ABOUT PRODUCT SYMBOLS, SAVERS, AND ACCUMULATIONS

We are also a society characterized by social change, particularly technological change that moves in the direction of greater and greater production of more kinds and more numerous objects for consumption and accumulation.

Hypothesis:

New varieties of objects will be most readily accepted by the accumulators and most often opposed by the savers.

ASSUMPTIONS ABOUT THE SOCIAL VALUES OF ACCUMULATORS AND SAVERS

Our society is characterized by basic cultural differences, one of them being social status. Social class levels are occupied by people, some of whom are upward mobile by intent and fact. Others are non-mobile, by intent and fact. The values which dictate judgments about actions, such as the kinds of objects which are consumed and accumulated, will vary by class level and by the presence or absence of vertical mobility.

ASSUMPTIONS ABOUT THE PERSONAL VALUES OF ACCUMULATORS AND SAVERS

The personality components are distributed through the class levels and through the mobility types. By relating the social and personality components, it is possible to state a series of hypotheses about accumulators and savers as they are related to the object world around them, particularly to objects which are new or old to the culture, those which are imposing or not and those which are predominantly for display or for consumption.

At the direct, practical level, all of these theoretical statements can be summarized by one basic question: What kinds of

things are people likely to buy and not buy if they are in given class positions and if they are or are not socially mobile? In other words, what is the effect on purchasing behavior of being in a particular social class and being mobile or non-mobile?

If this is the crucial question, theoretically grounded, then we can lay out a whole series of hypotheses concerning values about money and values about buying various kinds of objects for consumption and for display. Some of these are:

There will be a relationship between values held by a particular subject and the extent to which particular products exemplify those values.

There is a differential hierarchy of things for which it is worth spending money.

Veblen's theory that conspicuous expenditure is largely applied to the Upper Class is erroneous. It runs all the way through our social system.

From these statements certain other hypotheses follow:

At different class levels, symbols of mobility will differ. There is a differential hierarchy of things on which it is worth spending money. Class and mobility will be two of the dimensions that will differentiate. Also personality and cultural background.

The place in the home where these symbols will be displayed will shift at different class levels. The underlying assumption here is that there is a hierarchy of importance in the rooms of the house. This should be checked to determine whether the assumption is correct and the extent to which the hierarchy varies with social class, mobility, age, ethnicity.

The non-mobile people tend to rationalize purchases in terms of cost or economy. In other words, we believe that non-mobile people are oriented more toward the pole of the accumulation of money. Purchases then are rationalized in terms of the *saving* involved.

I will only say that all the preliminary evidence indicates this is so. For instance, in a study of how people would make investments, the stable people overwhelmingly mention insurance, which is security. By contrast, the mobile people at all levels prefer stocks, which are risk-taking. In Warner's words, the mobile individual acts as if he were free, white and twenty-one, completely able to handle the world and perfectly willing to gamble on himself as a sure bet to succeed.

Our social class placement was based on a multi-stage probability area sample of Metropolitan Chicago involving 3,880 house-

holds. We found that the matter of placement could not be done by the relatively simple scoring that had been sufficient for the smaller cities. To secure house typings, we had to provide the field investigators with photographs of a wide range of dwelling types, all the way from plush apartments complete with doormen to tarpaper shacks. We had the most trouble with occupation, because of the very complexity of metropolitan life. To solve this operational problem, it was necessary for Bevode McCall to construct an exhaustive list of occupational types involving degree of responsibility and training required by each. The data finally used by McCall for the calculation of scores were:

(weighted by 5) Occupation (from 1 to 7 broad categories)
(weighted by 4) Scources of Income (from 1 to 7 types)
(weighted by 3) Housing Type (from 1 to 7 types)

The sum of the individual's weighted scores is used to predict his social class level as follows:

ISC Scores	Predicted Social Class Placement
12-21	Upper Class
22-37	Upper Middle Class
38-51	Lower Middle Class
52-66	Upper Lower Class
67-84	Lower Lower Class

Let me say that not only is there a social class system operative in a metropolitan area, but it is even more significantly a determinant of the individual's behavior than it is in the smaller city. One extremely important reason why the marketer should be aware of the social class system is that all of us fall into the error of thinking that we can make judgments about the behavior of the lower status individual on the basis of our middle class behavior. Yet this is the social class structure of Metropolitan Chicago, typifying the transformation of the formerly agrarian midwestern cities from Pittsburgh to Kansas City, into a series of big mill-towns:

Upper and Upper Middle	8.1%
Lower Middle	28.4%
Upper Lower	44.0%
Lower Lower	19.5%

While the Old Families and the Newly Arrived are still recognizable as types, they constitute less than one per cent of the population. A similar study in Kansas City turned up so few that they could not be counted at all. On the other hand, we see the emergence of a seventh class, the Upper Lower Stars or Light Blue Collar Workers. They are the spokesmen of the Lower Class groups, high income manual workers who have the income for more ostentatious living than the average factory worker, but who lack the personal skills or desire for high status by social mobility. They are the highest status level in the LOWER CLASS, which group constitutes two-thirds of the population.

There is certainly a rough correlation between income and social class. But we think social class is a much richer dimension of meaning. There are so many facets of behavior which are explicable only on a basis of social class dynamics. For instance, this analysis of the purchase of appliance types in Chicago over a four-year period shows a very different picture by income and by class:

NINE APPLIANCE TYPES—FOUR-YEAR PERIOD

By Income		By Social Class	
Over $7,000	36.2%	Upper & Upper Middle	16.6%
$4,000-6,999	46.0%	Lower Middle	29.2%
Under $4,000	17.8%	Upper Lower	45.7%
		Lower Lower	8.5%

Income analysis shows that the lowest income group represents an understandable smaller market, but nevertheless a market. Social class analysis highlights a fundamental difference in attitudes toward the home between the two lower classes. The Upper Lower Class man sees his home as his castle, his anchor to the world, and he loads it down with hardware—solid, heavy metal things—as his symbols of security. The Lower Lower Class individual is far less interested in his castle, and is more apt to spend his income for flashy clothes or an automobile. He is less property-minded, he has less feeling about buying and maintaining a home.

We did a study of the young housewives in twelve new suburbs. *Fortune* reported exhaustively on one of these, Park Forest, Illinois, a brand new planned package community of some 28,000 population, as one picture of the new Suburbia. We found tremendous differences in these suburbs involving class and degrees of

mobility. Park Forest is a suburb partly Lower Middle and partly Upper Middle, characterized by both vertical and especially geographical mobility. These were, overwhelmingly, people who had moved from other parts of the country, who had few local roots, and who consequently wanted to integrate themselves in friendship groups. But this wasn't typical of the new Lower Status suburbs where the woman did relatively little fraternizing. It wasn't typical of the new Upper Middle Class mobile suburbs where the people were preoccupied with status symbols, not in submerging themselves in the group.

We studied a new community of Upper Middle Class negroes. This was a resettlement project with relatively high rents for negroes. Eighty-five per cent of them had come from the South where social class was compressed and not permitted to function. But as soon as they came to Chicago, the class system opened up and they were anxious to establish a social distance between themselves and other negroes. Almost everyone of them said they enjoyed the "peace and quiet" of this neighborhood, which was their way of insisting that they were not like the noisy lower class negroes.

Their favorite department store was one of the highest status stores. When asked why they patronized this store, they never mentioned price or quality, but always the atmosphere of acceptance for them which did not challange their very shaky concepts of themselves as Higher Status individuals.

In the probability sample, we asked these questions of the total population:

"If you were shopping for a good dress, at which store would you be most likely to find what you wanted?"

"For an everyday dress?"

"For living room furniture?"

"At what store do you buy most of your groceries?"

To assume that each individual would choose the highest quality store is utterly wrong. Every store has a definite social class attraction where the individual feels that he or she belongs. More people indicated Sears Roebuck for living room furniture than any other store. Yet Sears' strength was among these wage-earner working class people who couldn't imagine themselves shopping at the High Status stores even if they had all the money in the world.

I have found that the typical big retailer, in a rough sense, feels that he sells everybody. Even the highest quality stores have basement stores. But nothing could be farther from actuality. The

social class profiles of each store, even of the chain grocery supermarkets, that conceivably have universal appeal, indicate that the shopper senses instinctively whether this is a Lower Lower Class store or an Upper Middle Class store. She isn't going to take a chance feeling out of place in a store where she considers she doesn't fit.

Social Research, Inc., has done some studies for us of the way women perceive department store advertising and retail grocery advertising as a set of symbols conveying to them the general character of the store. Whereas the merchant is concerned in his formal thinking almost entirely with merchandise offerings, the shopper is making many other judgments about the store which will completely override any bargains. Among other things, she always asks herself, who are the other people in the store, how are the clerks going to treat her, and what are the goals of the owner? "Is this a big volume store? Is this a bargain store? Is this a more leisurely store where the clerks will acknowledge high status customers?" The Lower Status shopper expects the clerks to be "just people." The Upper Middle Class woman expects them to be high-salaried servants.

The shopper feels that she can make logical extensions from the artwork, the style, the typography, the general tone of the advertising, to the character of the store itself. It is my considered judgment that the most important function of retail advertising today, when prices and quality have become so standard, is to permit the shopper to make social class identification. There is also the factor of psychological identification, of course. Two people in the same social class may choose different stores. One may prefer a conservative store, one may want the most advanced styling. But neither one will go to stores where they do not fit, in a social class sense.

The shopper is intimidated by some stores, she feels that some are considerably beneath her. She is looking for the ones where she feels comfortable and where her goals are understood and respected. All of this has nothing to do with economics. The very shouting of bargains and sales, ("We are slashing prices to the very bone! Come in and get the biggest deal of your life!") conveys to the High Status shopper that she doesn't belong in that kind of establishment. She avoids any milling mobs. On the other hand, high style advertising with its restraint and sophisticated art frightens the Lower Status woman. She sees it as formal and cold and forbidding to her. The very atmosphere, the store personality, the advertising style, which attract the quality shopper, repel or warn the mass shopper that she will be over her class

depth and she can expect subtle humiliations. She doesn't even read the prices.

The two largest grocery chains in the Chicago market, according to our data, are A & P and a local chain—Jewel Food Stores. Even though they offer the same groceries, the same services and the same prices, often in the same neighborhoods, they draw very different customer bodies. A & P is very strong with the mass market, Jewel has its strength among the Middle Class. Both fulfill very well the expectations of their particular customer body.

Curiously the stores we find in trouble are those that are "neither, nor." In other words, they have no clear-cut profile in any group. This quite contradicts the notion of the golden mean-satisfying everyone. The two largest department stores are Marshall Field and Sears—one a quality, one a mass appeal store. Apparently the successful store requires some definite social class niche which it fulfills particularly well.

While the national brand can and often does cut across classes, I can think of lots of product types and services which are typed with social class labels. I can't imagine myself travelling by motor coach because none of the people like me do so, even though I am sure there is nothing wrong with it. On the other hand, in spite of air coach fares, I don't see many factory workers or day laborers on vacation around the airports.

For a number of years we have always used this dimension of social class in our product studies, just because there can be vastly different attitudes and symbolic meanings. Beer, for instance, is primarily a mass product. These are the people who buy it in quarts, who serve it to friends, who represent most of the consumption. Sausage, in our Consumer Panel, has startling high use, yet again it is the Common Man who does this heavy buying. Today he represents big potential for motor boats; he loads his boat on a trailer and drives fifty miles for a week-end. The marketing problem is how to appeal to him, not to me.

On the other hand, the kind of super-sophisticated advertising which appears in the New Yorker and Esquire is simply meaningless to the Lower Status people. They cannot comprehend the sly humor, they are lost by the bizarre art. They have a different symbol system, a very different approach to humor. Such sales successes as vodka and tonic water and men's deodorants and foreign sports cars were accomplished without benefit of any buying from this part of the market.

Most of the really big local television success stories, in Chicago at least, have been achieved by personalities who radiate to the mass that this is where they belong. These self-made

businessmen who do the announcing for their own shows communicate wonderfully well, not with me, but with the mass audience. While we don't like their programs, and we switch off their lengthy and too-personal commercials, these same mannerisms tell the Lower Status individual that here is someone just like himself, who understands him because this is the counterpart of himself.

Burleigh Gardner's group has approached the class problem in marketing by breaking the population into Upper Middle or quality market; the Middle Majority, which combines both the Lower Middle and Upper Lower; and then the Lower Lower. I think the distinction should be drawn between the Middle Classes and the Lower Status group. In several dozen of these store profiles, there is scarcely an instance where a store has appeal for the Lower Middle and Upper Lower Classes with anything like the same strength.

I would like to make the break between the Middle Class, representing one-third of the population, and the Lower Status or Working Class or Wage Earner group, representing two-thirds of metropolitan Chicago. This will permit some psychological distinctions to be drawn between the Middle Class individual and the individual in our society who is not a part of our Middle Class system of values. Even though this is the dominant American value system, even though we have been taught by our parents that it is the only value system, this Lower Status individual doesn't necessarily subscribe to it at all.

At every election we are bombarded with appeals to vote as a civic responsibility. Middle Class women ring doorbells, offer to drive voters to the polling places, and put up posters reminding us that we must exercise this birthright of ours. But this is a Middle Class institution toward which the Lower Status man feels very differently than we do. He doesn't respond to our appeal. If he votes, it is because some political captain asks him to.

Our wives are very active in women's organizations. Modern American society has delegated a large share of its functions to women's voluntary associations. These are particularly active in matters of education, recreation, health, various political activities, and protection from evils. But the Lower Status woman doesn't participate. She doesn't work for the PTA or the Hospital Auxiliary or the League of Women Voters.

On the other hand, the sex roles are much closer together in the Lower Status family. When we asked women about family goals, Lower Status women talked about their husband's getting ahead in the world. They were fully aware of his work and how much he made. But Middle Class women were generally vague

about their husband's occupation and just didn't talk about it as a goal. Whereas, the Lower Status woman was concerned with success in itself, the Middle Class woman was thinking about the trappings of success, such as foreign travel, joining a country club, and having a maid.

I said that our studies included a spend-saving aspiration analysis as related to social class. The question was asked: "Suppose your income was doubled for the next ten years, what would you do with the increased income?" This is a fantasy question taken out of the realm of any pressing economic situation to reflect aspirations about money. The coding broke down the answers to this question into five general categories: The mode of saving; the purpose of saving; spending which would consolidate past gains, meet present defensive needs, prepare for future self-advancement; spending which is "self-indulgent-centered;" and spending which is "house-centered."

I am quoting from analysis of this study by Roger Coup, a graduate student of the University of Chicago:

"The higher the individual's class position, the more likely is he to express some saving aspirations; conversely, the lower his class position, the more likely is he to mention spending only. Moreover, the higher the status, the more likely is the individual to specify *how* he will save his money, which is indicative of the more elaborate financial learning required of higher status.

"Proceeding from the more general categories (such as saving versus spending only) to more specific categories (such as non-investment versus investment saving and the even more specific stock versus real estate investment, etc.) we find an increasingly sharper class differentiation. It is primarily *non-investment* saving which appeals to the Lower Status person (Lower Lowers supply 10 per cent more answers than would be expected from chance alone, whereas Upper Middles supply nearly 30 per cent fewer answers than would be expected with the other classes ranging in order between the two extremes). Investment saving, on the other hand, appeals above all to the Upper Status person (Upper Middles supply 110 per cent more answers than expected, Lower Lowers 45 per cent fewer than expected).

"Investors almost always specify how they will invest. And here in mode of investment are examples of the most sharply class-differentiated preferences. Intangible forms of investment like stock and insurance are very clearly distinguished as Upper Status investments. Nearly four times as many Upper Middles select insurance as would be expected by chance, whereas only

one-fifth as many of the Lower Lowers select it as would be expected by chance. By contrast, Lower Status people have far greater preference for tangible investments, such as real estate, a farm, or ownership of a business.

"To sum up, Middle Class people usually have a place in their aspirations for some form of saving. This saving is most often in the form of investment, where there is a risk, long-term involvement, and the possibility of higher return. Saving, investment saving, and intangible investment saving—successively each of these becomes for him increasingly symbols of his higher status.

"The aspirations of the Lower Status person are just as often for spending as they are for saving. This saving is usually a non-investment saving where there is no risk, funds can be quickly converted to spendable cash, and returns are small. When the Lower Status person does invest his savings, he will be specific about the mode of investment, and is very likely to prefer something tangible and concrete—something he can point at and readily display, and which are really things."

This spending-saving analysis has very obvious psychological implications to differentiate between the classes. As Coup states, "saving itself generally suggests foresightedness, the ability to perceive long term needs and goals." Non-investment saving has the characteristics of little risk-taking and of ready conversion, at no loss, into immediate expenditures—the money can be drawn out of the account whenever the bank is open. Investment spending, on the other hand, has the characteristics of risk-taking (a gamble for greater returns) and of delayed conversion, with possible loss, to expenditures on immediate needs.

Warner points out that this aspiration analysis throws into relief profound psychological differences, which he has perceived in many studies:

Middle Class	Lower Status
1. Pointed to the future.	1. Pointed to the present and past.
2. His viewpoint embraces a long expanse of time.	2. Lives and thinks in a short expanse of time.
3. More urban identification.	3. More rural identification.
4. Stresses rationality.	4. Non-rational essentially.

Middle Class	Lower Status
5. Has a well-structured sense of the universe.	5. Vague and unclear structuring
6. Horizons vastly extended or not limited.	6. Horizons sharply defined and limited.
7. Greater sense of choice-making.	7. Limited sense of choice-making.
8. Self-confident, willing to take risks.	8. Very much concerned with security and insecurity.
9. Immaterial and abstract in his thinking. (Idea-minded)	9. Concrete and perceptive in his thinking. (Thing-minded)
10. Sees himself tied to national happenings.	10. World revolves around his family.

From a study "Consumer Types by Social Class in Metropolitan Chicago," which we have just completed, let me point to these extremes in order to establish that these psychological differences affect economic behavior:

Consumer Type	Upper Middle %	Lower Lower %
Friendly	28	50
Impersonal	72	50
Sale-Minded	76	33
Not Sale-Minded	24	67
Downtown-Centered	28	83
Local Centered	72	17
Other Directed	84	25

Consumer Type	Upper Middle	Lower Lower
Inner Directed	16	75
Economy Minded	76	0
Not Economy Minded	24	100
Vicarious Shopper	76	25
Not Vicarious Shopper	24	75
Impulsive	20	75
Not Impulsive	80	25

SUMMARY

Obviously this one paper could not cover the subject in anything approaching total scope. It was essentially my purpose merely to develop these basic premises which I think are highly significant for marketing:

Very definitely there is a social class system operative in metropolitan markets, which can be isolated and described.

It is important to realize that there are far-reaching psychological differences between the various classes. They do not handle the world in the same fashion, they do not think in the same way literally. As we try to communicate with the Lower Status group representing two-thirds of the population, it is imperative to sense that their goals and mental processes differ from the Middle Class system.

Consumption patterns operate as prestige symbols to define class membership, which is a more significant determinant of economic behavior than mere income. We did develop that each major department store, furniture store and chain grocery store has a different pulling power in different status groups. As McCall points out, the usual customers of a store gradually direct the store's merchandising policies into a pattern which works. The interaction between store policy and consumer acceptance results in the elimination of certain customer groups and the

attraction of others, with a resulting equilibration around a quite stable nucleus of specific customer groups who think of the store as appropriate to them. This involves a "fit," a matching between their self-image and that of the store, which others (outside of these groups) also are aware of. It should be stated, however, that the class groups may change their store loyalties as they think of different items.

I have not developed the subject of taste differences, which like mobility is a subject by itself. Suffice it to say that this taste system as prescribed by class membership is more accurate for predicting the individual's buying behavior than the mere possession of money.

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A MARKETING PROFILE OF THE SENIOR CITIZEN GROUP

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J. Walter Thompson Company

"Grow old along with me!
The best is yet to be,
The last of life for which the
first was made . . ."

THIS quotation from a poem by Robert Browning suggests, I believe, the hope that springs eternal for those who are entering their "golden years," or to put it differently—entering the "mild" blue yonder is a time of great *personal* opportunity. And, as I hope to demonstrate in the following pages, our aged population—our Senior Citizens collectively—represent a challenging *marketing* opportunity.

Today the creed of the gerontologists is no longer John Donne's imaginative challenge—"Death, thou shalt die"—but rather, I think, "Death, thou shalt wait." Certainly, advances in control of infectious diseases, public-health measures, daring surgery and painstaking rehabilitation, have combined to lengthen the over-all U. S. life expectancy (at birth) from 47 years in 1900 to 69 today. Since life expectancy mounts as the hazards of successive age ranges are passed, an American woman of 65 at present still has an average of 15 years to live. Similarly, in this country, a man of 65 can look forward, on the average, to 13 years more of life. This then is, indeed, the Age of Age.

Now, in order to focus more sharply on the segment of the population which is central to this discussion, the terms "senior citizens" and "aged," used hereinafter, shall refer exclusively to persons who have attained at least the sixty-fifth anniversary

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of their birth. Defining the subject age group in these terms permits a cordial working relationship with the statistical data developed by government and private reporting agencies.

In the broadest sense, this paper attempts to develop a profile of the important marketing characteristics of the Senior Citizen Group. Specifically, research has been aimed at answering some of the following questions of marketing interest relative to this aged segment of our population: How large is the market? Where do they live? How do they make a living? How much do they have to spend? And, what specific marketing opportunities exist?

RESEARCH BARRIERS

Now, let me say first, before entering these questions directly, that one is confronted with a formidable problem in attempting to research this segment of the population. For while there is a great deal of talk and thought about Senior Citizens, there is very little marketing action relating to them—except perhaps in housing and drugs.

In most lines of marketing endeavor, the thinking is chaotic. Nobody seems to know what value to place upon the aging customer. Retailers, especially, tend to cast the over-65 market a worried glance—and go on selling to *other* markets. One might even be led to observe that: "The only businessmen who have their eyes on the Senior Citizen market are the undertakers."

Well, how can this be? Why should some 14 million consumers hold so little lure? The answer is that several factors work strongly against pin-pointing this market. First, except for some special health and comfort items, it's a group that wants the same things other age groups want. In this respect, it differs from the children's and teen-age markets.

Next, it has less economic identity than most age categories. There seems to be no middle-income group here. The diamond-shaped income pattern of the whole population—with its broadest segment in the middle income group—changes to a triangle-shape, with by far the greatest number of oldsters at the base of the triangle. Yet there's also a larger than average percentage at the very top—that is to say, there are more millionaires aged 65 than there are aged 30.

Finally, this is a group that indignantly resists identification. Partly, this seems to reflect the stigma that a youth-infatuated society tends to put on old age. And partly, it is because age itself is losing its meaning. The improved status of the Senior Citizen both physical and economic make him act like, and want to be treated like, everyone else.

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Despite the fact that you can't tell a Senior Citizen from any other citizen without a St. Petersburg program, it is still possible to suggest some answers to the questions posed earlier.

HOW LARGE IS THE MARKET?

The trend toward an increasingly larger proportion of Senior Citizens in our society has existed for well over a century, and has recently been greatly accelerated. Several factors combined to increase the number and proportion to the present high level: The post-Civil War rise in the birth rate; a small but significant increase in the expectation of life at age 65; the precipitous decline in the birth rate which took place between 1900 and 1936; and, the gradual aging of millions of immigrants.

Since 1900, our total population has doubled while the number of men and women 65 years and over has quadrupled. Furthermore, since 1930 alone, the number in this age bracket has risen 100 per cent, while the total population has risen only 30 per cent. Today, there are 14,127,000 Americans who meet Senior Citizen requirements, of which about 6 1/2 million (47 per cent) are men and 7 1/2 million are women. The old age group accounts for about 8.5 per cent of the entire population.

Currently, the Senior Citizens are showing a net gain of 300 thousand a year. There is every reason to expect a continued sharp rise in their number. The factors which have produced the recent changes have not yet spent their effects. If no new and catastrophic influences enter, it is estimated that there should be just about 16 million aged 65 and over by 1960, and nearly 21 million by 1975.

The proportion of the aged in the population also seems certain to increase during the next two decades—probably to about 9.3 per cent in 1960, and 10.0 per cent in 1975.

WHERE DO THEY LIVE?

Fully as important as the number of Senior Citizens, in developing a marketing profile, is their distribution through the several parts of the United States. Where, in fact, do they live? In 1950, aged families were distributed throughout the country, with one-third in the Northeast, one-third in the North Central states, and the remainder in the South and West. The larger local concentrations were in the more recently developed regions, particularly the Far West.

In New England, the aged constitute a larger proportion of the total population than elsewhere. In Maine, New Hampshire, Vermont and Massachusetts, the proportion is more than one-third greater than in the nation as a whole. In addition, four states in the farm belt—Iowa, Kansas, Missouri, and Nebraska—and one Mountain State, Montana, have relatively high proportions of aged persons as a result of emigration of the younger generations.

At the other end of the scale, low proportions of the aged in the population are most pronounced in the Southeast (with the notable exception of Florida) and in the Southwest, with less than pro rata shares being evident in South and North Carolina, Georgia, Arizona, Utah, and New Mexico.

Rural-Urban Distribution

Now, one of the more significant marketing aspects of the movement among the elderly population of the United States is the increased extent to which they are concentrating in the nation's towns and cities.

From a situation in which the urban districts had only 93 per cent of their proportionate share of the aged population in 1920, the percentage has risen consistently with each passing decade as follows: 95 per cent in 1930; 100 per cent in 1940; and 103 per cent in 1950.

To carry the analysis a bit further, we may briefly call upon the tabulation of population characteristics, according to size of place, which was introduced in the 1950 census. This tabulation affords some insight into the extent to which cities and towns of various sizes have more or less than their pro rata share of the nation's Senior Citizens. Calculations completed to date show, for example, that the central cities of urbanized areas having more than one million inhabitants had just 99 per cent of their pro rata share of the aged in the United States; those in urbanized areas of some 250 thousand to one million inhabitants had 102 per cent and those in urbanized areas of less than 250 thousand had 105 per cent.

The pro rata share of Senior Citizens continues to increase as the size of the population center is reduced in number. In brief, these data show clearly that the village or small town is still to a very considerable extent "America's old folks home."

Variations from City to City

The extent to which Senior Citizens are concentrated in certain cities, and their conspicuous relative scarcity in others, also

deserves attention. According to the latest census returns, cities of 100 thousand or more where aged people are most concentrated include:

St. Petersburg	Portland, Me.
Pasadena	Lawrence, Mass.
Atlantic City	Portland, Ore.

At the opposite end of the continuum, the following cities are marked by a relative paucity of old people in the population:

Corpus Cristi	Jackson, S. C.
Charleston, S. C.	Savannah
Columbus, Ga.	

Migration

Now as a final attempt to answer the query "Where Do They Live?" let's briefly consider the topic of "migration." Other than the fact that a considerable number of senior citizens have settled in Florida and California, little is known about the migration of the aged. What little is known may be summarized in three points:

Relatively few larger cities attract significant numbers of elderly men and women.

State capitols and university towns seem to attract old people and to afford the type of life sought by those who migrate.

Proportionately, elderly migrants figure most largely in the aged populations of Florida, Arizona, California, Louisiana and Texas. In fact in those five states the number of elderly migrants involved between 1940 and 1950 was about double that involved in the movement to those states in the previous decade.

WHAT DO THEY DO FOR A LIVING?

At this point, we now have some idea of how many Senior Citizens there are and where to find them. To further develop the marketing profile of this group and to possibly uncover some preliminary clues to their financial capacity, let's note briefly their employment situation.

In March, 1954, nearly one person in each four aged 65 and over was employed or actively seeking work (about 3,225,000). Now, specifically what do these people do for a living? About

one-fourth of the aged men in the labor force are farmers or farm managers. About 10 per cent of the older men at work are "service workers", i.e., firemen, guards, policemen, barbers, janitors, etc. About 13 per cent work as managers, officials and proprietors other than farmers, and roughly a like number are employed as craftsmen, foremen, and kindred workers. Smaller numbers are operatives, clerical and sales workers. Most of the women workers aged 65 and over are employed as household servants. While operatives comprise only one-fifth of the total labor force, only one-tenth of the workers aged 65 or more fall in this category.

In general, then, the heaviest occupational concentrations of our Senior Citizens are in agriculture, manufacturing, and service industries. While such concentrations follow the specialization pattern of the nation's total working force, the concentration of men 65 and over in agriculture is inordinately large. That is, only one-twelfth of the total labor force is made up of farmers, while almost one-fourth of the working Senior Citizens make their living in this way.

HOW MUCH DO THEY SPEND?

Now, let's consider another dimension of central importance in the marketing view of any population group. Income and distribution according to income and particularly "How Much Do They Spend?"

Careful study has verified the intuitive judgment that families with an aged head have predominantly low incomes. If the family head is still employed, his earnings have shrunk; if retired, his retirement income tends to be low. Currently, half of the families with a head 65 years or over have an annual cash income below $2 thousand. Three out of 10 such families had less than $1 thousand in income.

However, the preponderance of low incomes for families with aged heads does not lessen the importance of analysis showing that there are about 2 1/2 million Senior Citizen families with yearly incomes above $2 thousand. More important, it does not lessen the marketing importance of the near 700 thousand Senior Citizen families with annual incomes of $5 thousand and more.

What the income of the entire group adds up to is simply this: A disposable personal income in 1956 of $20 billion (or 7.4 per cent of total U.S. disposable personal income.) Now as stated here, disposable income is based only upon wages and salaries and does not include the effect of these additional buying power supplements:

A Social Security pension of up to $162.80 a month for man and wife; a company pension, added in many instances to Social Security pay; a $1,200 personal exemption from federal income tax; no Social Security taxes to pay on the pension; priority in getting low cost housing; and liberal tax deductions for medical expenses.

Furthermore, Senior Citizens may be presumed to have more disposable income in the sense that they have fewer financial commitments as they get older. Their children are out on their own, and the mortgage is usually paid off. But this doesn't mean that they hoard the money thus freed. Instead, in their role as doting grandparents, they represent an important market for toys and children's clothes. Likewise, they buy a considerable share of refrigerators, washing machines, and TV sets as gifts for struggling young couples.

Taking everything together, what I'm saying is simply this: An important segment of the Senior Citizen market has money, and they spend it for goods and services. This spells marketing opportunity!

WHAT SPECIFIC MARKETING OPPORTUNITIES EXIST?

I trust that by this time the unique features of the Senior Citizen marketing profile are becoming more apparent. Here are several examples of how some businessmen have transformed a rather neglected segment of the population into an important marketing opportunity.

Retailing

Some retailers have made a definite play for the older customer. Apparel, for example, is one field where taste can be defined by age group. The elderly man is by no means the conservative one might think. He likes his argyle socks and seems addicted to gaudy shirts and sportswear. He has to be attired conservatively while he is working. When he retires, he cuts loose.

The elderly woman, as might be expected, is less predictable. She dresses conservatively, and appears to put comfort ahead of style. Dress specialty shops indicate that they sell 10 times as many size 16's as size 40's, which was not true 20 years ago. Why? Because the older woman presently is extremely conscious of her figure.

Lane Bryant in New York has specialized for some time in clothes for the larger figure (hence, in many cases, the older figure). About five years ago, it opened a Junior Plenty shop for

chubby and out-sized young people. In a short time, female Senior Citizens invaded the youngsters' precincts.

The elderly women, do, however, insist on long sleeves—because arms show age early. They are partial to "soft, full" lines and flattering lace. And, of course, they insist upon a certain propriety of style.

In general, observers in the apparel industry argue that the Senior Citizen market must be carefully courted. "It's the kiss of death to mention age," they say. That's one reason why many stores simply stock the size that elderly folk wear and then call the sales job done.

Lane Bryant's struggle to sell tactfully illustrates the problem. Its current slogan, "If You Are Not Slender," is perhaps an improvement over its old appeal to "Stylish Stouts." But its officials feel that it still isn't perfect.

Housing

Turning to another field, undoubtedly housing is one of the primary needs of the Senior Citizen. In many cities, projects are either under discussion or in progress. Carroll City, Florida, is perhaps typical of the kind of real estate development that may soon make more appearances throughout the country. The city will develop ten thousand homes in the under $10 thousand bracket and which will be largely marketed to retired people. In this connection, the *Journal of Lifetime Living*, the magazine which caters to the "over 40 market" frequently carries advertisements like this one:

> "Improved Homesites in a Fashionable Florida Waterfront Subdivision—Lots only $7.50 down, $7.50 a month, no interest or taxes."

Of course, the market is not all on the low-income side. Some of the projects, especially in the Southwest, run to fairly high rents. At least one private operation, the Mayfair residential hotel in Houston, which opened a superswank set of units last October, indicates that more than 70 per cent of its units have been rented to people 65 and over—at $300 to $700 a month.

Curious about this fact, the management made a survey of its tenants to find out why the oldsters prefer the Mayfair. It found that Senior Citizens like the "extreme modern" decor better than the younger tenants. They appreciate the gimmicks and appliances in the dream-world kitchens. They appreciate the spaciousness—

room in which to put their big, old furniture. Most of all, they like the privacy that the management insures them.

Mobile Homes

A certain segment of the Senior Citizen market, of course, appears not to be attracted by permanence and prefers to travel. This tendency is turning into a bonanza for the trailer and travel market. According to the Mobile Homes Manufacturers' Association, retired people accounted for only 5 per cent of the $321 million market in 1953, but represented about 10 per cent of the $324 million trailer market in 1954. Industry indications are that the percentage will increase in succeeding years.

Mobile Home Parks

In addition to providing impetus for the mobile home manufacturing industry, Senior Citizens' interest in mobile homes has led to the development of a rather new market for trailer parks (there are now twelve thousand in the United States). There are several currently under construction, the largest being the 540 acre Guernsey City development in Tampa, Florida. Advertised as "A Paradise for Retired People," the project will boast four and one-half miles of waterfront lots, 100 shuffleboard courts, three swimming pools, a 3,500-seat auditorium, a 300-berth yacht basin, an open-air amphitheater, and accommodations for three thousand trailers. Significantly, it will include a 22-store shopping center.

Travel

The Senior Citizens also seem inclined to undertake some travel. It is the almost universal illusion that no matter where you are, the best place to spend your Golden Years is somewhere else. In a Pan American-Grace Airways survey on its North-South American routes, the average age of passengers was nearly 55 years. "This," stated a Panagra spokesman, "made us realize that we were all wrong in keying our advertising to younger people who apparently have neither the time nor the money to go off on an extended tour to South America. Instead, we decided to aim for the 35 million Americans in the 47-70 age bracket who constitute a large group of people who can actually afford the luxury of a trip to South America."

Food

Other industries have also begun to examine the Senior Citizen market. For example, the food industry is well aware that eating habits change markedly after 40. As they advance in years, people require fewer calories, less salt and more protein and minerals. Early in 1955, H. J. Heinz Company launched a new line of Senior Foods specifically designed for old people and successfully test-marketed in Cincinnati and St. Petersburg. The first items in the geriatric line were beef stew, lamb stew and chicken stew in 8 1/2 oz. cans. Heinz officials believe that the Senior Food line has excellent market potential, because unlike baby and junior foods the market does not turn over about every two years, but only after 15 years or more.

Geriatrics

A few companies have found the Senior Citizen market a really fertile field—espeically those companies that deal directly in geriatric products. Generally speaking, there are at least seven types of products with geriatric appeal: A general tonic; dietary supplements (vitamins, minerals, and amino acids); digestive aids; cathartics (laxative); diuretics (exciting discharge or secretion of urine; a medicinal substance); oral and external analgesics and anti-rheumatics (absence of sensibility to pain); and products for denture wearers.

Basically, the success of a geriatric line, over and above the therapeutic efficiency of the products themselves, would seem to be the reflection of a keynote of hope and confidence; a central appeal that old age is a period to be enjoyed and not dreaded; an underlying theme which suggests that the last years of one's life should be the happiest, the most serene, and the most comfortable.

All things considered, in order to capitalize on the marketing opportunity afforded, remember what the experts say: Senior Citizens fear being put on the shelf. Therefore, I say, any merchandiser who can bring them off the shelf should find a welcome.

SOME CLUES TO SELLING SUCCESS

Finally, let's touch upon some noteworthy clues to selling this market—and then note the marketing responsibility inherent in servicing Senior Citizens.

First, some selling clues. The Senior Citizen often lives alone.

He must make new friends after losing work and home relationships. Hobbies, which were once only peripheral when he was active, are often the center of his life.

But in marketing leisure-time products, care must be exercised. For instance, while retired men like hobby crafts, such older men are less inclined to use power-driven machinery. This suggests that power tool marketers may need to play up safety factors and speed control if they wish to sell to the retired.

Similarly, studies indicate that retired professional and businessmen prefer fly and plug fishing, while their working-man counterpart leans toward live-bait fishing. Another clue to marketing to the retired: Women and professional and businessmen are partial to exotic, decorative types of gardening, while wage-hour workers stick to regular gardens, and more prosaic floral arrangements. Furthermore, professional and businessmen prefer photography more than other retired workers.

Now, Senior Citizens often follow a kind of activity pattern which is of marketing interest. First, they go to rest and relax in St. Petersburg (eight thousand per year), or some other resort with a benign Southern climate. Then, they travel and acquire a few hobbies. Gradually, however, after a year or two, they settle into a single hobby or part-time occupation. As for hobbies, traveling, reading, gardening, sewing, and bridge are the most important interests. Hobbies, which as a group are of secondary interest include: Hunting, fishing, boating, music, photography, home workshops, and movies.

Finally, to conclude, I believe that the expanding Senior Citizen market offers at least two important possibilities to business and at least one challenging responsibility.

First, it is difficult to chart oldsters' needs. But needs do exist. Because elderly folk are somewhat bound by habit, the manufacturer who wants to sell them should start early and develop in the population a loyalty to his product that will be hard to break. If people are to drink milk after 65, they must be started drinking it long before they reach that age. If they are to be interested in a hobby using your materials, you'd better start interesting them now.

The second possibility is the development of products unique to the needs of older people. For example, "non-skid" paints that will keep the aged from slipping on wet floors, and special bathtubs that permit easy and safe entry and exit. In general, some work has been done along this line but not in any highly identifiable quantity.

The responsibility for business lies in conditioning the worker

to retirement. This responsibility closely parallels the first possibility. If a person is to be active and happy in his retirement, he has to be taught how before the event occurs. In some businesses, personnel counselors are available to guide employees approaching retirement in plans to occupy leisure time—hobbies, social work, income-producing activities, etc. Although something is being done along these lines, it seems that more could and should be done if business is to fully tap America's most neglected market: The Senior Citizens group!

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THE ECONOMY AND CLASS STRUCTURE OF THE NEGRO AND THE CASTE SYSTEM IN AMERICA

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The Upjohn Company

CASTE

IN this country there is no generally accepted definition of Negro. A popular definition is that all who are not purely Caucasian or Mongoloid are Negro. Legal definitions vary from state to state, some defining a Negro as one who has one-fourth or more Negro blood, others as one having as little as one-sixty-fourth Negro blood. Except for the Africans who have recently come to America, as a rule it can be said that there are no "pure" Negroes in the United States. Since the arrival of Negroes on this continent, there has been a steady flow of white blood into the Negro race, although the amount of such miscegenation has decreased since abolition. To a very small extent the reverse is also true; light-skinned partial Negroes have been assimilated into the Caucasian race in the phenomenon commonly termed "passing." The only realistic definition that can be drawn from what has been written on the subject is that a Negro is a person that believes himself to be one, and is considered to be such by his peers.

The concept of "race" does not permit distinction between the Negro and the white population, since "pure" races are not in question here and many of the so-called "racial" characteristics of the Negro are found in the white population. "Class" is not suited for this purpose either, as it implies a group from which

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movement by a member is possible. As noted above, the only way in which a Negro can move from his group is to impersonate a member of the white group. The term "minority group" is unsatisfactory also, since the limitations placed by the system upon the Negro differ from the disabilities of recent white immigrants. The prohibition of movement from the Negro group leads to the use of the term "caste" in describing the Negro segment of the population. The caste system in America is distinguished from the class system in that it is rigidly closed, whereas the class system is open and mobile. Except for clandestine passing, a Negro is not allowed to pass from one caste to another as he can pass from one class to another. Caste, as distinguished from class, consists of drastic reduction of free competition in the various spheres of life. Within each caste there is also felt social distance, and as a result of this further restriction of free competition, each caste has its own class system.

Social relations across the caste line vary considerably from region to region within the country and from class to class within the Negro group. In the North, many members of the white population do not discriminate against Negroes and there exist those who will stand up for the Negroes' rights whether or not they are directly concerned. Such action in the North does not result in the ostracism of these persons from white society, whereas in the South, where the color line is embodied in the law and in the structure of the buildings, such a white person would be excluded entirely from the caste system as a result of breaking the caste solidarity.

Although uncomfortably real, the caste system is unwritten and uncodified, as it exists only in the minds of those who experience it. The inferiority of the Negro, implied by the caste system, for any individual white person is determined by his conception of the Negro, resulting from personal experience, the prejudices of his peers, popular misconceptions, and on a less conscious level, fears of economic and perhaps sexual competition. The meaning of the caste system for someone who considers the entire Negro race to have the mentality of a prize fighter, cleaning woman or shoe shine boy, the respect for law of the common criminal, and a desire for a home no different than what he has for a home, must be quite different from that of a person who more rationally knows the Negro to be not much different from the white who has had as much or as little opportunity. Although most whites, upon exercise of some rational thought on the subject, would probably tend to accept the latter view in the absence of external stimulus to the contrary, as a result of the characteristic apathy of the

population and the desire to behave according to the individual's concept of the behavior of the group, most whites, in fact, will accept the former view.

THE NEGRO CLASS STRUCTURE

This view of caste as held by white society would be best fulfilled if Negroes were to be in all respects inferior to the lowest class of whites. Such a structure has never been realized even in the South. After emancipation, some Negroes became land owners and gained property of other types. Education for Negroes was generally inferior, but was made available. Social segregation was of primary importance in the social differentiation within the Negro caste. Because whites did not choose to minister to Negro congregations, to teach in Negro schools, or to perform any service for the Negro, a Negro professional and business group emerged to perform these functions and constituted the Negro middle and upper class. This social differentiation occurred completely on the Negro side of the caste line. Thus, the dual system of social class developed—one class system on each side of the caste line. Although the systems are similar, they are not directly comparable. On the same class level, on which white and Negro individuals possess the same income, occupation, education, etc., the white does not look across the caste line upon the Negro; he looks down upon him.

The majority of Negroes are members of the *lower class*. These are the unskilled or semi-skilled laborers and domestic workers in the urban communities; the agricultural wage laborers, tenants, and household servants in southern rural districts. As a result of low and uncertain incomes, levels of living do not include much of what is considered necessary according to the American standard of living. Lower class Negroes generally have little education and the older generation is often illiterate, or practically so. Books, periodicals and newpapers, social movements and ideas (except for the Negro problem) play insignificant roles in their lives.

The class is Southern in origin and character. Even in the Northern cities the lower class of Negroes is largely made up of recent migrants and their children from the South. Both economically and culturally the Southern origin, to a great extent, projects the attitude and behavior patterns from slavery into the present time. Lower-class Negroes have kept more of the mental servility and dependence of the slave population, and developed less resourcefulness, self-reliance, and sense of individual dignity.

Their situation is not favorable for developing strong incentives for personal accomplishment and improvements. Standards of industry and honesty are low. Judged by American standards, their family life is disorganized. Aggression and violence are neither rare nor censured much by community disapproval. They are the group most subject to lack of legal protection in the South, and they probably have least respect for law and justice as it is applied in that region.

To a section of the lower class belong the chronic relief cases, the habitual criminals, prostitutes, gamblers, and vagabonds. In the upper levels of the lower class there are many persons who have definite ambitions to better their own, or at least their children's status. These will take care not to let their insurance lapse; they will have permanent affiliation with churches and lodges; they will try to keep their children in school.

Much smaller is the Negro *upper class*. In rural districts the ownership and successful management of a sizeable farm may give a person upper-class status. All over the country training for a profession or the carrying on of a substantial business, particularly in the field of banking or insurance but also in contracting, real estate, and personal service, is the basis for an upper-class position. In smaller communities even today, and previously also in big cities, every steady employment where some training or skill was required and income was substantially above the average among Negroes conferred upper-class status. Employment by public agencies, particularly federal agencies, has always carried high social esteem in the Negro community, and, if coupled with home ownership and education, usually puts the person in the upper class. Generally, in the relative absence of wealth, higher education is becoming almost essential to an upper-class position. Light skin color and other white features also are associated with upper-class status, especially among Negro women. This basis of distinction grew up in slavery times when the white master's slave children had a better chance of gaining freedom and getting an education, and when house servants—often selected because of their light appearance—had more privileges than the field slaves.

As in the white upper class, family background is often stressed. Whereas the lower class is matriarchal, the upper class family is organized upon the paternalistic principle. Children are shielded, as far as possible, both from influences of the lower-class Negroes, and from humiliating experiences of the caste system. They are ordinarily given a higher education and professional training. As Negroes are commonly believed to be loud, ignorant, dirty, and lax in sexual and all other morals, good

manners and respectability become nearly an obsession in the Negro upper class. If the community offers a choice, they will tend to belong to Episcopal, Congregational, or Presbyterian churches.

The Negro upper class is most thoroughly assimilated into the national culture, but it is also most isolated from the whites. Its members are the most race conscious. They provide the leadership, and a large part of the membership, of the nationally established Negro defense organizations, such as the local branches of the NAACP. But they sometimes feel great difficulty in indentifying themselves with the Negro masses whose spokesmen they are, although certainly no more than the white upper class with the white lower class. The Negro upper class is characterized by many of the traits that are in complete contrast to those of the masses of Negroes in the lower class. It is their social ambition to keep up this distinction. They are often the severest critics of the Negro masses in private.

The Negro *middle class* is usually assumed to be larger than the upper class, but smaller than the lower class. Members of the middle class have achieved a small, but, in comparison with the lower class, less insecure occupational position. However, they are characterized even more by a striving toward a better economic position. They have typically had primary education and, not infrequently, secondary education, but few of the older persons have been to college. Education has a high ranking in their scale of values, and they want to give their children this means of fuller cultural emancipation. They, as do the upper class, look down on the lower class and attempt to be respectable. Thrift, independence, honesty and industriousness characterize the middle class. Family life is stabilized. They are ordinarily energetic and loyal members of lodges and of churches—usually Baptist or Methodist.

ECONOMIC POSITION

It should not be necessary to go into great detail here concerning the enhanced economic position of the Negro that has come with urbanization and wider employment opportunities. Such statistics have been widely disseminated in marketing periodicals in recent months and a few observations should suffice.

The income of the Negro has been stable at approximately two-thirds of that of the white since 1940, although its distribution has changed. While the income of the Southern Negro farmer has fallen faster than total farm income, the urban Negro has come to

enjoy an income in some areas as high as four-fifths of that of the urban white. This urban middle-class Negro displays a consumption pattern similar to that of whites of the same class.

The Negro death rate is now almost as low as that of the white. The per cent of the Negro population enrolled in school is about the same as that of the total population. Over 200 thousand Negroes are now in a college or professional school. Although this represents a relatively lower enrollment than that of the white American population, it will make this generation of American Negroes one of the best educated groups in the world.

This relative prosperity of the urban Negro middle class is due primarily to the need for production workers during the last World War; a need greater than could be filled by white workers alone. The employment of Negroes in what were once "white" jobs has been continued by our continuing post-war prosperity. Contributing factors have been the non-discriminatory clauses in Federal contracts, union activities, Fair Employment Practice laws enacted in some states, and, to an unfortunately small extent, realization on the part of some managements that Negroes are people no less than are whites.

The picture has a less hopeful side as well, however. Although income and employment, education and legal rights of the Negro have improved in relation to that of whites, declines in his position have taken place or can be foreseen. Housing is the most serious ugly spot from the standpoint of sound economy and healthy society, and is the most disgraceful from the standpoint of ethics, morals, religion and patriotism. Negroes are denied the opportunity to live in virtually any desirable communities, not because of insufficient money, but because of arbitrary exclusion. Where opportunity to buy or build does exist, credit is available on terms inconsistent with the economic position of the applicant. Forced to live somewhere, the Negro must pay whatever rent the landlord chooses to set. Negro rental property constitutes a seller's market, and the Negro must pay a considerably higher rental for dilapidated slum facilities than is associated with middle-class facilities in white neighborhoods. An extreme example is to be found in Chicago where rents in the worst Negro slums may be as high as 75 cents per square foot per month, whereas rents in the most exclusive upper-class white lake-front apartments are about 25 cents per square foot per month. In Philadelphia 18 per cent of the population is Negro. Only seven-tenths of one per cent of the housing completed from 1953 through 1955 was available to Negroes.

Although desegregation is necessary for the advance of future

generations of Negroes, the ultimate prosperity of the South, and the comfort of white consciences, one of its immediate effects is to reduce the professional opportunities of the Negro. Even if southerners permit their children to be educated with Negroes, they will be less disposed to allow them to be educated by Negroes. Residential desegregation will be, on the whole, unfavorable to the Negro small businessman.

The decline of the importance of the small farm can only work to further reduce the less than subsistent standard of living of the Negro farmer. As jobs in manufacturing become more complex, and office work continues to account for a larger proportion of the labor force each year, the reluctance of some companies that hire Negroes to admit them to training programs, or employ them in offices, can only hinder, if not reverse, the upward trend in Negro income.

Finally, if there should be any decrease in the level of prosperity, or if real Gross National Product should grow at a rate lower than that of population, Negro employment would suffer sooner and harder, as Negroes are the first to be laid off.

The inferior and more precarious economic position of the Negro as compared with that of the white, in the short run is in part due to educational and environmental handicap, but is more directly traced to the limitations of the caste system. In the long run, the caste system is entirely responsible. The inferior economic position of the Negro serves to keep the social class structure of the Negro concentrated in the lower levels, which in turn feeds the prejudices that determine the implications of the caste system, which keeps back the economic position of the Negro, and so on.

Upward movement of the class structure of the Negro must be accompanied by increases in the standard of living resulting from wider employment and higher incomes. Such employment and income must be provided by industry controlled by whites, who not only determine the extent and severity of caste implications, but are subject to them.

It was noted above that these implications of caste differ among the white population depending upon the realism with which the Negro is observed. It is in this flexibility in the concept of caste that there might exist an opportunity for progress to operate in the apparently static cycle of dependence of social class upon economic position, which is dependent upon caste, which, in turn, is dependent upon social class (as observed by the higher caste).

The only implication of caste that, were it to be discarded, would discomfort the white population is intermarriage. Although

there is nothing wrong in it, and nothing is to be feared from it, in practice it is not wanted for themselves by individual members of either group. Such realism in approach to caste is fortunately, unnecessary to the economic advancement of the Negro. It is only necessary that the occupational (and to some extent, social) capabilities of the Negro be recognized. If the meaning of caste were to become more realistic in this respect for employers, the effects would be noted in the economy and class structure of the Negro.

The impetus for the adjustment of the meaning of caste could come from two sources. The first, ethical considerations stemming from Christian morals and the American Creed, has been conspicuously ineffective in the past. The second, which shows considerable promise, is that of economic necessity. Although there is considerable unemployment at present, in many fields shortages of qualified applicants exist. The realization that eminently qualified Negroes are available to fill these positions may serve as a stimulus for some rational reappraisal of the prejudices of managements. The slump in residential housing could be countered with availability of new housing to Negroes. Increased contact with literate, capable Negroes, resulting from industrial and residential desegregation would act to dispell much of the erroneous belief about the differences between races, and could lay a basis for a time in the future when members of the separate castes would look across, rather than up or down at the members of the other caste.

A NOTE ON "THE NEGRO MARKET"

In recent months, many advertising and marketing trade papers have carried articles on the Negro market. This recognition of the Negro market is nothing new. For generations storekeepers in the South have recognized the Negro market with higher prices, inferior merchandise, and separate facilities. The Negro labor market has had recognition by employers all over the country, as demonstrated by lower wages and limited opportunity. The Negro housing market has been recognized with limited facilities, higher rents and total exclusion. These articles, for the most part, however, merely point out that American Negroes have about 17 billion dollars to spend annually and urge their readers to "tap" this huge market. These articles give one the impression that this 17 billion dollars is being hoarded in old mattresses. Of course, such is not the case, and running an ad in *Ebony* will influence just about as many readers per dollar to switch brands as would

an ad in *Life*. That Negro market that is "untapped" is the earning power which is not being used. Full use of the Negro labor market would generate "new" income, consumption and production, and would, in fact, constitute an "untapped" market. It is not meant to deny the value of advertising in media with primarily Negro audiences. There is reason to believe that such advertising can be more profitable than that placed in other media. Rather, it is meant that realization of a "great new market" will require more than the placement of a few ads.

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MAJOR ISSUES IN MOTIVATION RESEARCH

WROE ALDERSON*

Alderson & Sessions

ONE major tendency in marketing thought can be broadly described as functionalism. The functionalist approach to marketing is fundamentally interested in the behavior of individuals or organizations, in the ends toward which they strive, and the processes through which they seek to achieve these purposes. The functionalist viewpoint is exemplified in the title of a recent volume sponsored by the American Marketing Association, *Adaptive Behavior in Marketing*. In my own book *Marketing Behavior and Executive Action,* I have identified functionalism with problem-solving activities in the market place on the part of both the buyer and the seller.

The term adaptive behavior is broader than the term rational behavior, and indeed, behavior can be observed to be adaptive in animal species we do not credit with the power of reason. Nevertheless it is appropriate to give special attention in marketing theory to rational problem-solving as the uniquely human mode of adaptation. Such a viewpoint as to the nature of the marketing process and the normal reasons for entering the market have obvious implications for an approach to consumer motivation. For some practitioners of motivation research, functionalism doubtless seems old-fashioned and appears to imply an acceptance of Economic Man and the postulate of perfect rationality as employed

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in classical economics. It should be obvious that modern functionalism is not talking about perfect rationality, both because that is not the type of rationality available in human affairs and because perfect rationality is not required in order for a functional system to operate reasonably well.

Perhaps we need a theory of imperfect rationality capitalizing on the obvious parallel with the theory of imperfect competition. Recognizing the important role of fixed habits and of impulsive actions in human conduct the theory of imperfect rationality would seek to understand why such systems of action as the market function do as well as they do to satisfy human needs and under favorable circumstances even reflect a trend toward increasing efficiency. In a recent article appearing in *Advertising Age* I contended that motivation research and marketing decisions based on research findings should take account of both the rational and the irrational, of both gullibility and gumption as manifested by the consumer. I further asserted that in the long run the seller would be well advised to look upon the consumer as a rational individual engaged in problem-solving. Marketing opportunity consists fundamentally in helping consumers to solve their problems rather than hoping to find a clever short cut in playing on the consumers' fears, weaknesses and suppressed desires. I am here today to defend that proposition, to give further consideration to various approaches in motivation research and what they can contribute, and to describe briefly some new trends in basic research which I believe will reshape and strengthen our efforts in applied motivation research.

A product purchased by the consumer or indeed by the trade or industrial buyer may serve numerous specific purposes which can be classified in various ways. Possibly one of the most fundamental classifications from the viewpoint of consumer psychology is that which recognizes the instrumental and the symbolic functions of a product. Schools of thought with respect to consumer motivation differ as to their relative emphasis upon the instrumental and the symbolic and as to their estimate of the gains which can be achieved from marketing through investigation of these two aspects of motivation. An extreme characterization of a currently popular approach to motivation would be that it regards the study of the instrumental aspect of buying as exhausted and holds that important results can be achieved today only by concentration on the symbolic aspect. I am prepared to accept an equally extreme characterization of my own opposing view as to where the opportunities lie in motivation research. That is the view that the functionalist or problem-solving approach has been so enriched by

developments over the past five years that we are only now entering upon a new cycle of fruitful investigation of the instrumental aspects of consumer motivation. This view does not disregard the irrational aspects of behavior but accepts them as part of the problem for the individual seeking rational solutions to problems.

Functionalism does not overlook the importance of symbolism, but is perhaps prepared to deal with symbols in a broader and more flexible way than motivation research which has its principal roots in Freudian psychology. The insights of the Freudian school have been useful in reminding us of the biological basis of human behavior and the persuasive influence of innate or instinctive behavior patterns. In marketing, this view may lead us to discover that a sweater or a can of beans is purchased not only for its instrumental value but for its symbolic overtones as well. The difficulty arises when this view is pushed to the extreme suggested by Vance Packard in his book entitled *The Hidden Persuaders*, in which the consumer is regarded as an inert and docile subject to be manipulated by the clever salesman.

The fallacies of this view can be most readily exposed by applying it to other relationships within the market as compared to that between the advertiser and the consumer. If it is smart to regard the consumer as a dupe who can be exploited by playing on unconscious or instinctive impulses, then why not adopt that approach in relations between the advertising agency and its clients or between the motivation research organization on the one hand and manufacturers and advertising agencies on the other? Adopting the orthodox Freudian conception as to what motivates the advertiser, one can visualize quite a change in the situation analysis with which advertising agencies typically begin their work for a newly acquired client. In the past the situation analysis has been concerned with such humdrum matters as company sales history, productive capacity, technical know-how, and the market position of the company's products. Under a thorough going Freudian approach we could drop all that and deal with the more lively topics of the libido, defense mechanisms, and the meaning of dreams. Instead of trying to understand how our new client had attained his present position in the food industry we would conduct a depth interview with his mother to see what we could learn about his toilet training.

Freud provided us with a classification scheme which would become highly significant under this penetrating approach. One type we would attempt to identify at once and to avoid if possible is what Freud called the anal type. According to the orthodox Freudian, the personality structure of the anal type is characterized by what is called the three P's, namely, parsimony, petulance,

and pedantry. Obviously no advertising agency in its right mind wants a client with these characteristics, particularly parsimony. How much better to work for a client of the urethral type which is characterized by extreme competitiveness and excessive ambition. The agency which is fortunate enough to lay hold of a good solid urethral account should have no difficulty in persuading the client to spend money like water.

Once we adopt a philosophy that is founded on a belief in our own cleverness on the one hand and the stupidity of those we are seeking to manipulate on the other, it is hard to know where to stop. An organization engaged in motivation research which adopted this viewpoint would obviously be foolish to spend its most creative talent on the irrational impulses manifested in consumer behavior. In the long run they could do far better by encouraging their clients to adopt first one irrational theory of human conduct and then another. Psychoanalysis is sufficiently sectarian that it should always be possible to arouse irrational fears in the client that he has been following the wrong theory as to consumer irrationality. Imagine the feeling of insecurity which could be induced in an advertiser who has been relying on the Oedipus complex only to learn that his more successful competitor has been exploiting the notion of birth trauma. There is always the danger, of course, that at some point in this swing toward irrationality a government agency may step in saying that it alone had a truly rational understanding of consumer needs, and that advertising and other marketing processes were now to be regimented for the benefit of all concerned.

It may be objected that what has been said is a caricature of the approach to motivation which derives its inspiration from psychoanalysis. If so, it is no greater a distortion than any assertion that modern functionalism involves an acceptance of the postulate of perfect rationality. As a matter of fact, the great body of marketing effort and advertising appeals still proceeds explicitly on a functional basis and deals with instrumental values in the products offered, even though there may be some resort to hidden persuaders in addition. Most advertisers can certainly be expected to retain the overt instrumental appeal even if only as a vehicle and cloak for the hidden persuaders. Attention to the hidden persuaders is certainly not new, as we have recently been reminded by the published confessions of that master persuader, Gerard Lambert, and his frank discussion of the use of fear and other irrational aspects of motivation in the sale of mouth wash. The new idea, the trend which is about to happen, is certainly not the return to the Freudian ideology of a generation ago. Rather,

the new idea is the fresh and vital approach to instrumentalism which is coming out of such new fields as operations research and out of new developments in the established branches of the behavioral sciences.

It would appear useful at this point to summarize some of the distinctive features of this functionalist approach to motivation. It begins with a basic interest in decision making and recognizes that all marketing decisions whether by the seller or the buyer are made in the face of uncertainty. Consumer buyers as well as commercial buyers are risk takers who are generally engaged in creating or replenishing a stock of goods to be used on some future occasion. In every purchase some degree of probability is assigned explicitly or implicitly to the likelihood that the occasion for use will arise and to the likelihood that the product purchased will meet that occasion satisfactorily. Anticipated occasions of use differ widely both as to the likelihood that they will occur and the degree of urgency involved once they have happened. We do not know nearly as much as we need to know about how values are assigned to these various use occasions or about how probabilities are assigned to the incidence of a use occasion or to the prospective performance of a product as an instrument for meeting such an occasion. We know that buyers can be made aware for the first time that they may be confronted by a certain occasion for use. We are confident that advertising can influence either the sense of urgency concerning such an occasion or the probability which the consumer assigns to its incidence. We have not as yet devised reliable measures for these various aspects of market impact. That kind of measure is one of the essential requirements for a more scientific allocation of various forms of marketing effort or a more efficient design of the advertising appeals and procedures which will serve to motivate consumer buying.

Within the framework of this instrumental approach a skillful marketer will obviously take account of whatever is known about symbolic implications either favorable or unfavorable. It is an old story in the export business, for example, that the seller must avoid brand names which turn out to have an obscene or unpleasant connotation in a foreign language. Symbols may be secret and shameful or they may be hallowed and socially acceptable. A new automobile or a mink coat may be a symbol of social status as well as an instrument for transportation or maintaining bodily warmth. To try to press on from these obvious and open aspects of symbolism into the world of private and personal symbols is not always consistent with a profitable employment of the methods of mass merchandising. Admittedly there may be a wide difference among products as to the relative importance of the

instrumental and the symbolic. There may also be a special role for the hidden persuaders in inducing a trial for a new product. The product may have to appeal as a symbol in order to get a chance to demonstrate its virtues as an instrument. In the long run every product must be judged by what it can do for the consumer. Consumers are essentially and inescapably instrumentalist in basic outlook with the possible exception of those fortunate few whose needs are so simple or whose means are so great that they need not be concerned about the allocation of their resources. The cigarette is one common commodity where the symbolic aspect of motivation might be expected to be relatively high and where there has been an obvious resort in advertising to the not too hidden persuaders. The cigarette may be a symbol of sociability, of sophistication, or of permissive self-indulgence. Nevertheless the scare about lung cancer has brought a precipitate return to instrumental values and much more concern with the effectiveness of filters than with what a cigarette may mean in the dream world of the smoker.

Another feature of the functional approach is the recognition that the consumer buyer is very often acting as a purchasing agent for a household rather than being concerned solely with personal needs and desires in making the purchase. There is also a large category of purchases in which the buyer is thinking of the desires of someone else in selecting a gift. In buying gifts or in replenishing household assortments, instinctive or impulsive behavior on the part of the ultimate user obviously does not enter into the transaction except insofar as they were taken into account by the consumer as purchasing agent. Thus for a very large proportion of the total volume of retail sales the psychoanalytic school of motivation needs to find some means of making a psychiatrist out of the consumer purchasing agent rather than practicing mass psychiatry on the ultimate users.

The functionalist approach also takes account of the normal processes of learning in consumer buying as in other aspects of human behavior. In fact it holds that rationality as manifested in the real world consists as much in learning to do better as in the capacity for efficient behavior on the first occasion. Learning demonstrably takes place in the consumer-buyer's handling of the probabilities involved in buying behavior. This has been shown through our own basic research, both with respect to actual shopping trips and simulated shopping situations. Signs or symbols have an important place in the theory of learning and modern functionalism does not neglect this aspect of the learning process. Symbols play a functional role of tremendous significance in

communication, in the formation and persistence of behavior groups, and in man's adjustment to his universe at the higher levels which we identify with spiritual values.

We can expect that the functionalist approach to human behavior and to motivation research in marketing will be deepened and broadened in the next five years. The range of its precision techniques and its quantifiable results will be greatly extended. There are three converging lines of investigation which will bring about these changes in motivation research. They might be distinguished broadly as pertaining to the psychology of motivation, the sociology of motivation, and the philosophy of motivation. A brief description of these three trends will, I trust, serve to demonstrate the exciting prospect confronting students of consumer behavior and motivation.

With respect to the psychology of motivation the marketing student has been confronted with the conflicting claims of the various schools such as Gestalt and psychoanalysis. Among these various schools psychoanalysis is particularly subject to doctrinaire and sectarian differences within its own borders. This divergence of views appears to be inherent in the psychoanalytic approach in which a massive structure of theory is supported on a very slender foundation of empirical research. The economist or market analyst has been obliged to be thoroughly eclectic in drawing upon the insights of the various schools and attempting to combine them in a synthesis of his own. There has been an urgent need for an integrating structure of theory which had no crippling commitments to any of the existing schools of psychology.

The outlook is now promising for such new foundations in psychology, because of research developments at British and European universities. This group is taking a fresh look at animal behavior through field observation and some very ingenious experiments. One of the basic issues which has concerned them is the distinction between learned or conditioned behavior and innate or instinctive behavior. In one such experiment, birds of certain species are raised in narrow tubes which prevent any movement or exercise of their wings. At the point at which the control group, which has been raised under normal conditions, has fully mastered flight the experimental subjects are turned loose and it is found that they can fly also. Thus birds of these species apparently do not learn to fly but can fly instinctively as soon as they are old enough. On the other hand, nightingales which have been raised in isolation never develop the traditional capacity of their race for song. These two experiments point to the somewhat startling conclusion that a bird does not learn to fly but must learn to sing.

Here for the first time is a truly scientific approach to the identification of instinctive behavior as compared to Freud's bold postulation first of the dominant role of the sex instinct and later of the strange motivational complex which he called the death instinct. Both instinctive behavior and conditioned behavior are usually functional or adaptive in the sense of contributing to the survival of the individual or the group. Yet these students of animal behavior, who call their field ethology, recognize that behavior can be non-adaptive. In fact their work has attracted most attention in America through their treatment of what they call displacement behavior and which arises out of conflict or frustration. An example is the action of a fish called the stickleback when he meets another male at the boundary of the territory he is reserving for himself and his mate. His normal reaction is to fight if he is on his own ground or to flee if he has wandered on to his neighbor's territory. Confronted with this conflict he draws from his repertory of instinctive behavior an action which is inappropriate in either case. He stands on his head, thrusts his snout into the mud or sand, and goes through the motions of building a nest. This particular sequence of displacement behavior has come to be functional, however, since it has become ritualized in the social life of the stickleback as a threat to the enemy.

Displacement behavior is equivalent to what Freud called symptomatic behavior in his *Psychopathology of Everyday Life*. In fact ethology recognizes the three-way division of behavior into the instrumental, congenial, and symptomatic which I presented in my recent book on marketing theory. The terms I adopted, however, were drawn from the sciences of human behavior rather than from ethology.

An excellent and very readable summary of developments in ethology is available under the title of *The Study of Instinct*. Anyone interested in basic research in motivation will find here numerous suggestions for hypotheses to be explored in the realm of human behavior. One example is the discussion of sign stimuli and innate releaser mechanisms. The sign stimulus appearing in the environment may release an instinctive reaction but may not direct it. Sometimes effective response requires the presence of two sign stimuli, one acting as releaser and the other directing the individual in the search for the object which can satisfy his instinctive need. One suspects that some of the hidden persuaders growing out of motivation research may be effective releasers without serving equally well to direct the buyer to the sponsor's product.

Another motivational concept in ethology is that of levels of motivation and the threshold of response in the presence of various sign stimuli. Sometimes there is a surplus of motivation which overflows into what is called vacuum activity in the absence of any of the sign stimuli normally required to release or direct the particular sequence of behavior. Reactions to sign stimuli seem to accord with the Gestalt or configurational principle that a signal for action is seen in context. A dark silhouette constituting a stylized representation of a hawk with a short neck and a long tail will cause birds to scurry for cover when it is towed through the air. The same object towed in the other direction, giving the appearance of a bird with a long neck and a short tail is ignored by birds which fear hawks. This type of work is already having an impact on European psychology and should provide the basis for a broader synthesis in the psychology of motivation.

The second area, which I have called the sociology of motivation, I will dismiss even more briefly, partly because I have considered it at some length in previous statements or publications. The group or organized behavior system behaves as if it were pursuing certain objectives including its own survival. A type of behavior group of key importance for marketing is the household. We are only beginning to learn how to study the household as an operating system and how to interpret these results for marketing applications. We badly need a typology of households such as I recently suggested in a tentative way as contrasted with the numerous typologies of individuals derived from orthodox Freudianism and its many heretical sects.

The techniques for studying behavior systems such as the household will doubtless be improved as a result of the work that is going on in the study of systems in general. New fields of investigation have emerged such as cybernetics and operations research, and new tools have been employed such as probability models and the simulation of behavior systems. Forms of simulation are as varied as the mechanical analogs of the nervous system developed by the British neurologists Ashby and Walter and the use of games which simulate the decision structure of a shopping trip in the basic research program at Alderson & Sessions. The School of Industrial Management at M.I.T. has recently embarked on an ambitious program for studying the structure and functioning of operating systems through simulation on large scale electronic computers.

Simulation, of course, is only an auxiliary tool and the main line of endeavor must lie in the direct study of consumer motivation in the perspective of her participation in such behavior groups

as the household. It can be assumed that the family, like any behavior group, operates as if it were attempting to achieve both long-run and short-run goals, that it has a power and communication structure and that it is forced to make compromises in the attempt to satisfy the expectations of its members through its purchase of products. Certainly any attempt to understand the motivation of the consumer as an individual is likely to fall short if it ignores the need to justify a purchase to other members of the family or indeed in the light of one's own conception of the requirements of family welfare.

The third area of investigation which I listed is the philosophy of motivation. I am now using the term philosophy in the technical, professional sense. It has been the historic function of the philosopher to raise deeper issues about the values for which men strive than the issues which were raised by economists, moralists or art critics. The theory of value which once served in economics has suffered a progressive breakdown in recent decades. Economists first came to doubt the feasibility of constructing cardinal measures of utility and later to despair even of the more modest aim of consensus in ordinal rankings of preferences within a relevant behavior group. These problems are being investigated theoretically through such methods as symbolic logic and empirically through special interviewing techniques such as those devised by Churchman and Ackoff at the Case Institute of Technology.

Philosophy cannot stop here but must concern itself with such disparate realms as ethical and esthetic values as well as economic utility. What ends are worthy of man's full endeavor in the face of his clouded destiny compounded of bright promise and nameless terror? As we move toward an economy of abundance what problems of choice will remain in the absence of scarcity? Do our basic preferences really pertain to the probable outcome of our actions or to the act itself? In what ways do our preferences depend on the range of our knowledge or the degree of our sensitivity to our physical or social environments? By what principles can we mediate between actions which serve our individual interests and those which serve our behavior group, or among the conflicting claims of the several behavior groups to which we belong? How do we relate the specific ends for which we strive and the more general aim of maintaining the capacity for action? Are we chiefly concerned to eliminate the risks of action or is the gamble itself one of the major inducements for the active life? In more practical terms, what has the philosopher or the marketing man to say to the individual facing retirement who has worked hard to obtain money and leisure and has lost all talent for utilizing money

and leisure for his own satisfaction? Or for that matter what do we have to say to the young but ambitious family whose members want to get ahead in life but have only vague or conflicting ideas as to what they mean by getting ahead?

If you think these questions are beyond the scope of marketing, you may not care to read the next book I am going to recommend. You will have a while to decide since the book now exists only in manuscript. I am referring to *Costs, Utilities and Values* by C. West Churchman which I anticipate may well stand as one of the major intellectual achievements of this decade. Dr. Churchman has long been interested in marketing and the problems which it poses for the philosophy of science. He has become known to many in this association for his work in marketing and in operations research and as a philosopher who recognizes executive decision and consumer choice as proper concerns for modern philosophy.

Let me return in closing to what is intended as a temperate but determined advocacy of the postulate of rationality in marketing behavior and consumer motivation.

The operation of behavior systems is generally functional, but candor obliges us to recognize both malfunction and functioning through innate mechanisms at a subrational level. Human behavior is largely adaptive but none of us is perfectly adapted or completely efficient in adaptation. Rational problem solving is the uniquely human aspect of adaptive behavior but few of us would claim to have always acted in perfectly rational ways when confronted by perplexing problems. Too often we stumble through a novel situation the best we can, and hope to improve on our performance when a similar occasion arises. Faulty as our problem-solving techniques may be, the chief hope of mankind lies in perfecting them. In marketing, as in the other applied sciences of human behavior, we are not cramped with respect to room for improvement.

Omar spoke of "seizing the sorry scheme of things entire and molding it nearer to the heart's desire." In our various ways we are engaged in subduing an environment which gives some evidence of being confused or inhospitable in relation to man's wishes. We have no rational alternative to the effort to impose a rational order on our world and no brighter hope than to approach the status of rational beings in the process.

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THE PLACE OF MOTIVATION RESEARCH IN MARKETING RESEARCH

DERYL CASE*

General Electric Company

A FEW years ago, when the motivation research tea kettle was boiling furiously and when controversy over the matter was beginning to approach its most heated pitch, headquarters Marketing Services of General Electric Company decided we should take a thorough look at the whole subject so we would be in a better position to give counsel and advice about it to our clients, the operating departments of the Company. At that time, none of these hundred-odd operating departments had made much, if any, real use of techniques borrowed from the social sciences as tools in studies designed to help solve their marketing problems. So we embarked on a research study of motivation research as it relates to marketing, and one man devoted his full time to the project for a good many weeks.

The purpose of the study was (1) to determine what motivation research is, and how it might be applied in the solution of marketing problems; (2) to evaluate its advantages and limitations, and its probable future development; and, most importantly, (3) to make specific recommendations concerning the use of motivation research in the marketing activities of each GE operating department.

The first step was a comprehensive study of all published information on the subject. This was followed by a large number of rather lengthy personal interviews with people selling motivation research, people using it, and people following it objectively. The average discussion lasted about two hours, and we didn't use a structured questionnaire for those interviews. The subject was

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covered in an informal manner, although respondents were led to discussion of particular topics. Specifically, this survey of informed opinion covered people in research and consulting firms, in research institutes and foundations, in advertising agencies, in industrial and service businesses and in the academic world.

One man participated in all of the interviews but was usually accompanied by another member of our staff. When the time came for analysis and interpretation of the almost entirely qualitative data uncovered, the evaluations and opinions set forth in the report represented the combined best judgment of all those who had been involved in the project.

I'm going to discuss some of the findings, conclusions and recommendations set forth in the report which was circulated to marketing management throughout the company. Although the report was issued about three years ago, I don't believe its content would have been much different had we made the study in 1957. The main thing that would be added now would be General Electric's subsequent experience with motivation research. I do think there has been some lessening in the barrage of controversy about motivation research, indicating, perhaps, that it is beginning to find its proper level of value as a marketing tool. No one can deny it is finding increasing use by many of the country's top business enterprises as a new instrument in the study of marketing problems. Nevertheless, I recall an article in the October 1956 issue of the *Journal of Marketing* entitled "Is Motivation Research Really an Instrument of the Devil?" That was in answer to an earlier article in the same publication in which the author had really fired a blast at motivation research. So you see the controversy continues, even if at a slackened pace. Today's pro's and con's, however, do seem to be more intelligent than those of the past.

WHAT IS MOTIVATION RESEARCH?

Quoting almost verbatim from the report: There is no established definition of motivation research. It means different things to different people. It is in an emergent and highly unsettled state.

In the broad sense, motivation research is defined as any research designed to explain human behavior, regardless of the methods used. It would include study of conscious or subconscious motives, attitudes, needs and desires—why people feel as they do about a company, product, or situation; why they like or dislike something; why they buy or do not buy. It is research designed to get beyond learning *what* people do and into the *reasons* for their

behavior. For example, it seeks to discover *why* people buy the products they buy, the particular brands they buy, when and where they buy them. It is not limited to consumer buying motivations, but includes the whole broad area of human behavior and relationships with other people.

In the narrow sense, motivation research implies the use of psychological or other social science concepts and techniques to uncover motives.

Among the major obstacles to agreement on definition is a difference in the emphasis placed on techniques and objectives. Those who define motivation research broadly emphasize the importance of the objective, learning the reasons for human behavior, and are not concerned whether this is accomplished by social science techniques, by conventional direct questioning, or by any other procedure. On the other hand, some people limit motivation research to the application of the social sciences in marketing studies. To such people, the use of projective techniques, depth interviews, or other social science methods constitutes motivation research, while direct questioning, experimental designs, or other more conventional methods are considered something else.

Another obstacle is the differentiation between conscious and subconscious motives. Those using a broad definition would say that motivation research is an attempt to find *any* reasons for behavior, whether surface or underlying, rational or irrational. On the other hand, some people have stressed that it is the search for *underlying* reasons. These people feel that the main causes of behavior are emotional or irrational, and can be learned only through the special techniques of the social sciences.

A third area of disagreement occurs by defining motives in a strict, technical sense as opposed to a much broader meaning. The technical adherents believe that motives are the deep, basic determinants of behavior and attitudes, such as hunger and sex, and that most so-called motivation research does not really get at these fundamental influences. Those favoring a broader meaning feel that motivation research may properly be interested in any efforts toward better understanding of behavior.

So much for what motivation research is. Our report then went on to describe the various techniques of motivation research, both the conventional ones as well as those borrowed from the social sciences. It also described the various applications of motivation research and the extent to which we had found it used by a number of representative business concerns, both in the broad sense of the term and in its narrower sense.

Our investigation definitely indicated the need for motivational

information in marketing, therefore the obvious conclusion that there is a need for motivation research. The real problem in evaluation is to determine the worth of the approaches and techniques used. Although conventional procedures are good tools for use in motivation research, they are not always adequate. The use of social science concepts and techniques in cases where other methods are inadequate is the subject we felt we should evaluate. In the following discussion, which is taken from our report, I am using the term motivation research in its narrow sense.

ADVANTAGES OF MOTIVATION RESEARCH

"Motivation research is a valuable addition to the tools of marketing research for two basic reasons. (1) The application of the social sciences can help bridge the communication gap between respondent and researcher in cases where the respondent is unwilling or unable to give direct answers. (2) Motivation research provides a means of increasing knowledge and understanding of people, which can be useful in making marketing more effective. It provides a new approach to problems, which can sometimes provide more accurate, complete, and relevant information and increase the probability of correct solutions.

"Motivation research, like any other type of marketing research, can usually be done as well and thoroughly as need be for the type of information and degree of accuracy required. It is a flexible tool, which can be adapted to a variety of circumstances and problems. It can be verified and checked if findings are to be used for helping make important marketing decisions, or it can be used as a descriptive, indicative tool where ideas and hypotheses are desired and validity is of secondary importance.

"In the final analysis, any procedure is good if it can be used successfully. Empirical evidence shows that motivation research has been a help in solving marketing problems. Good case studies illustrating application of social science techniques are difficult to obtain. Published cases are usually lacking in details of procedure and use, and many studies are competitive in nature and thus kept confidential. Unsuccessful or disappointing studies are not likely to be publicized, since people dislike admitting failure. It is well to be skeptical about many of the claims made by research firms regarding their successes. For example, one such firm interviewed used a presentation in which they showed advertisements before and after changes suggested by a motivation research study. The new copy was credited with a substantial increase in sales.

When questioned about the case in a subsequent interview, the advertiser denied that the change in copy had brought about such spectacular results. Despite these difficulties in obtaining good, reliable case studies, our investigation uncovered a substantial body of information on degree of success in use. The general experience has been that motivation research has limited applications, is not sufficiently good as the sole basis for major marketing decisions, but where needed and applicable, has been of help and value.''

LIMITATIONS OF MOTIVATION RESEARCH

Our study did, of course, uncover some limitations of motivation research, and I am still using the term in its narrow sense. One is the lack of a systematic, established theory of motivation. It is still more of an art than a science. There are few accepted rules of procedure or methodology and, as a result, there is much poor research being done. However, progress is being made (although in bits and pieces) in the development of fundamental theory and basic knowledge, and it is possible to use some social science methods with a considerable degree of confidence.

Another limitation is created by doubt as to the validity and reliability of the social science techniques. The projective techniques, for example, were developed in the fields of clinical psychology and psychiatry for use in studying ''abnormal'' individuals. There is some question whether these techniques can be properly adapted to masses of ''normal'' people in marketing situations. Some projective techniques seem more valid for these uses than others, and there is evidence that they can be successfully applied in marketing when used with care and skill and adequate verification.

Because it is qualitative in nature and because motives are often complex, motivation research is difficult to apply, and findings are subject to possible misinterpretation. This is especially true where deep-seated motives are concerned. This limitation reflects the current immaturity and inexactness of motivation research and should be less of a problem in the future.

A number of practical limitations are attached to use of the social sciences in marketing. These methods tend to be more costly and time-consuming than conventional techniques. Qualitative findings are hard to tabulate and code and, consequently, are difficult to analyze in a systematic manner. There is some reluctance on the part of business people to accept the qualitative findings of motivation research, especially when the unfamiliar

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methods of the social sciences are used. Compounding this problem are the common mistakes of presenting findings which are too vague or general for practical use and reporting findings in unnecessarily complex language. There are difficult personnel problems associated with use of the social sciences in marketing. Good, qualified people are hard to find. Social scientists with business experience are scarce; charlatans and amateurs are a menace; and more highly skilled interviewers are usually required.

Another limitation is the problem of sampling. Much of the controversy about motivation research has been over the question of sample sizes and designs. Because large samples in this type of research are usually costly, time-consuming, and difficult to handle in analysis, there has been a tendency for many practitioners to use small samples, often without sufficient justification. Some social scientists are not concerned about sampling because they believe that insight and experience and a thorough understanding of people, along with a very small number of interviews, can provide adequate answers to motivational problems. At the other extreme are those who have grave misgivings about any research which is not based on a reliable probability sample.

The same sampling rules should apply in motivation research as in other types of marketing research. Size and design of samples depend on the objective of the study and the nature of the problem. Small samples are often sufficient. When the objective is to establish ideas or hypotheses, only enough interviews are needed to establish a pattern. When there are few variables, when motives are strong and readily apparent, when motivational differences are large, or when the degree of certainty required is not great, small samples may be adequate. On the other hand, larger, statistically reliable samples are needed when findings must be projectable to the market, when the relative magnitude of different motives is important, when it is important to know how many people have certain motives, when motivational differences are slight, or when certainty is required.

THE FUTURE OF MOTIVATION RESEARCH

Finally, the report contained our appraisal of the future of motivation research (still in the narrow sense of the term):

"The extension of marketing research into the area of human motivation has been a logical step in its development. The need for more and better information about customers represents a need for motivation research. It is probable that use of motivation research and the concepts and methods of the social sciences will

increase. Many of the current limitations will be overcome through development of better theory and better methods. The rate of improvement is dependent on the willingness of business and research firms to do fundamental research, experiment, and use promising concepts and techniques. Motivation research will likely be used in a wider variety of marketing applications. Even in areas where motivational forces are not now considered to be important, new research and experimentation may reveal important influences relevant to marketing.

"As marketing people begin to realize the proper place of motivation research as a valuable tool of marketing research, its faddish aspects should disappear. There may be discredit due to bad studies and there may be changes in its name, but this broad area of research related to people and the reasons for their behavior, now called motivation research, should have an important role in the marketing of the future."

RECOMMENDATIONS FOR G.E.

After that appraisal, the recommendations we made will not surprise you. We of course urged the continuation of research into motivations by conventional techniques, something the marketing research groups in our operating departments had done for years. But we also strongly advised experimentation with and use of the newer social science concepts in those instances where they represent the best way of attacking the problem at hand, particularly in cases where respondents are unwilling or unable to give direct answers.

As I said earlier, at the time the report of the study I have just described was issued, none of the marketing research groups in our hundred-odd operating departments had made much, if any, use of social science techniques in marketing studies probing into motivations. Since then, quite a number of motivation studies using the newer techniques have been made by several of the operating departments and, to date, I haven't heard of one which has not met the enthusiastic acceptance of the operating department's marketing management. We in headquarters Marketing Services feel that our report on motivation research in marketing served a worthwhile purpose in creating interest in the subject among our operating departments, in guiding them in wise applications and uses, and in avoiding the pitfalls that are inherent in a matter that has had so many faddish aspects. We have worked closely with the marketing research groups in the studies they have undertaken, most of which, I might add, have been done by outside professionals.

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I want to describe two or three case histories of studies that have recently been made by our operating departments using the social science techniques. But before doing this I do want to emphasize once more that conventional methods have for years produced for us a tremendous number of valid and useful marketing studies delving into motivations. Using the conventional methods, we have uncovered basic attitudes towards our products, both consumer and industrial, and the task they are designed to perform. We have ascertained and evaluated the product features which appeal to customers, and we have determined why people buy one product as opposed to another or a certain *brand* of one product as opposed to another brand of the same product. But we realize that the social science techniques do represent in certain situations a valuable and valid extension of the conventional methods, and we regard them as useful and worthwhile additions to tools employed by marketing research.

AUTOMATIC BLANKETS

Our Automatic Blanket and Fan Department recently had a motivation research survey conducted among consumers to determine their basic attitudes toward bed coverings in general and automatic blankets in particular. Although first introduced about 20 years ago, automatic blankets were being used in only about 10 per cent of American households as of the first of this year. The study was made in order to discover the basis for some specific actions that could be taken to hasten acceptance and increase sales.

Results of the survey confirmed some ideas management had long thought to be true, but also revealed some unexpected concepts and ideas. They are being put to work in both the product planning and advertising areas of the department, and as a matter of fact the new advertising program will reflect many of the findings of this study.

Here are a few of the study's implications and conclusions:

Users of automatic blankets should be emphasized as active, youthfully mature people. A great many consumers have the image of automatic blanket users as elderly, sickly people, and this idea needs to be counteracted.

Electrical and mechanical improvements which have taken place over the years should be communicated. Many consumers still regard the automatic blanket as an overgrown heating pad and have negative memories of early automatic blankets.

The physical control itself should be de-emphasized, but emphasis should be placed on what the control actually does. Past emphasis on the physical appearance of the control has served to remind consumers that it is an electric blanket and probably needs a control because the blanket may be dangerous.

The year-round use of automatic blankets should be communicated. The respondents in the survey had little notion that the automatic blanket can be used as a regular blanket in mild weather; they seemed to have missed the idea that it is quite appropriate when just a light covering is required.

The concept of consumers that automatic blankets are luxurious can be used advantageously. Although in most areas of life some individuals are fearful of luxury products, the self-indulgence when it comes to sleep makes luxuriousness appropriate and desirable.

Most consumers are dubious about the electrification of other bedding. Blankets are assumed to be the proper source of heat for sleeping. Other articles of bedding which might be electrified would only intensify the notion that such products are for sickly and elderly people.

D-C MOTORS

About a year ago, our Direct Current Motor and Generator Department had a motivation research study conducted among people in industries important to direct current equipment. Respondents included engineers, purchasing agents, company executives, technical editors and a small general consumer sample. The department management had sensed the existence of especially difficult weaknesses and barriers to effective marketing of direct current equipment and realized the need to gain greater recognition and acceptance of its products. Although the study was designed to answer a number of specific questions, two broad questions really defined the problem: (1) What are the psychological barriers to greater acceptance of d-c equipment? (2) How can General Electric hurdle these barriers—and even turn them into bridges which will speed d-c's acceptance?

The key finding was that d-c's acceptance is being slowed by a time barrier. Although some respondents view d-c as having one foot in the future, an indispensable tool of modern industry, helpful in such fields as electronics and continuous process manufacturing, the majority consciously or unconsciously reject d-c as something from the past. It is associated with outdated trolley cars and early efforts to produce power, an anachronism in this

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day and age. There is a tendency to brush it aside as something discarded and out-of-style, a somewhat unwelcome reminder of the past.

The keystone of GE's promotional imagery is progress. It is oriented upward and forward toward the new, not backward to the past and the old. Since d-c is old-new, it occupies an anomalous position; it does not lend itself as immediately and obviously as most other products to the kind of promotional approach characteristic of the company. Because of this, d-c may not have been given the attention which the complexity of its position, its expanding sales volume, and its promising potential would appear to warrant.

GE's general strategy in overcoming these barriers should be to bring it up-to-date for all, by strengthening present associations which link d-c with frontier developments in industry and weakening the associations which link it to the past. With a slight shift of emphasis, d-c can be presented, not as an *old* power source, but as a *basic* power source, with certain continuous and timeless and universal advantages—as a power source with a proud history and an even more promising future.

A number of respondents seemed to feel that there was little possibility of further improvement in d-c. This was an emotional feeling rather than a belief. Nevertheless, it tends to reinforce the tendency to think of d-c as old-fashioned and on the way out. Respondents tend to think of further motor developments in terms of a-c rather than d-c motors. General Electric should play up its research on d-c and give publicity both to theoretical work and the constant search for new d-c applications. A related finding was that the appearance of a motor plays a part in the readiness with which it is accepted. Thus, in developing and designing future d-c equipment, customer expectations regarding appearance as well as performance should be kept in mind.

The survey found there is a definite place in industry for d-c motors and drives and these places should be spelled out and emphasized by GE. The list of firms and industries which have accepted d-c gratefully or have never disowned it is an impressive one. It is suggested that these firms be made d-c endorsers and that advertising show how other firms in these industries or related industries can use d-c to advantage.

An advertising campaign, both in business media and by direct mail, was based on information obtained from the study. In addition, a program for sale to segments of the market through secondary distribution channels was developed using data uncovered in the survey. All these applications were regarded by

management as eminently successful and the direct mail campaign in particular was credited with producing a substantial volume of new business.

ELECTRIC DISHWASHERS

The third and last case I want to describe has to do with electric dishwashers. The University of Louisville had made an independent study concerning the cleanliness of dishes washed by hand compared with those washed in a General Electric Dishwasher. Results indicated that hand washing produced a low sanitizing efficiency, with the bacterial counts for objects washed erratic and frequently quite high. Mechanical dishwashing, on the other hand, produced a high sanitizing efficiency, with the bacterial count for objects washed uniformly at a minimum low. Management wondered how consumers would react to this kind of information and if it should be used as a sales appeal. After some consideration, the management of our Dishwasher and Disposal Department decided to have conducted an over-all motivation research study on the subject of electric dishwashers and to get a general reading of consumers' attitudes and opinions which would include an answer to the question mentioned above. Accordingly, a limited sample of both owners and non-owners was interviewed with the following objectives in the background:

> To discover what people, both owners and non-owners, see as the advantages and disadvantages of dishwashers.
>
> To describe what kind of person is visualized as being the type most likely to own a dishwasher.
>
> To discover why people have not bought dishwashers thus far, what their plans for buying these appliances in the foreseeable future may be, and who is likely to initiate such a purchase if it is made.
>
> To uncover any misconceptions which may exist relative to the operation or operating costs of the dishwasher.
>
> To isolate those themes which would have the greatest appeal when used in advertising and selling campaigns.

I could spend a considerable length of time discussing the findings and recommendations which emerged from this study. A number of interesting hypotheses for further investigation were produced, as well as a list of the best targets for promotional

campaigns and a list of the best advertising appeals. Consumer attitudes toward mobile vs. installed models were also brought into focus. All of this information can and will be put to work by our dishwasher management. Here are some of the more general implications which I believe will be of interest:

Almost everybody would like to own a dishwasher—the job of washing dishes by hand is regarded as monotonous, routine, uninspiring.

The dishwasher is regarded as a luxury, however, and consequently comes lower on the list of intended purchases than some other more "necessary" appliances such as new refrigerators, clothes washers and dryers, etc.

Wives are generally regarded as initiators of purchase since they are the chief users of dishwashers, but in *almost half* the owners' homes the dishwasher had been the husband's inspiration—a gift for his wife.

Ownership of a dishwasher is a symbol of both financial success and social status.

There were some misconceptions about dishwasher operation but the chief deterrent to purchase seems to be that it is a luxury item—most respondents believe the dishwashers are now mechanically excellent and do a superior job as compared with hand washing. (This answered the original question raised by the findings of the research done at the University of Louisville.)

The chief source of information about dishwashers seems to be friends of the respondents—friends who already own dishwashers and so demonstrate their use. There is a strong influence to purchase spreading from friend to friend.

The dishwasher owner is seen, all in all, as a quite "acceptable" kind of person—she is busy socially, and civically, she entertains at home, has at least two small children, is a neat housekeeper who prefers to spend her time with her husband and family rather than over a dishpan.

CONCLUSIONS

In conclusion, we at General Electric believe there is very real and valid place for the social science techniques as another tool of marketing research. We believe they should be used with discretion and with caution. We do not believe they are a panacea. We deplore the alchemy and the "Latin" with which some practitioners surround the subject and think the removal of some of the almost metaphysical aura with which some people endow the matter would be healthy. By that, of course, I don't mean swinging the pendulum to the other extreme such as one large advertising agency recently did by talking about "structured motivation research questionnaires" and "structured depth interviews."

The profitable path lies down the middle road, between the extremes. If it follows that path, I'm sure motivation research using the social science techniques will continue to play an increasingly important role in the marketing of the future.

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CONSUMER MOTIVATION AND ECONOMIC ANALYSIS

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IF there is one thing that motivation research and economics have in common, it is that considerable controversy surrounds the meaning and scope of both terms. To some people, motivation research refers to the use of psychological techniques to ascertain why people act and think as they do; others would include any techniques whether psychological or not; and still others would broaden the subject area from individual behavior to mass behavior. Similarly in the case of economics, definitions are as plentiful as the varieties of women's hats. I have seen marketing people turn purple when some economists have expounded on the scope of economics, and vice-versa.

This is not the place to discuss the merits of alternative definitions of these terms. I bring up the subject only to make clear what I am going to talk about.

To me a definition has to be suited to the problem at hand. Rarely will the same definition be best for all purposes. Accordingly, I shall restrict myself to a discussion of the use of psychological projective techniques in studying consumer saving and purchasing behavior. This does not mean that I rule out non-psychological techniques as valueless in this regard—on the contrary, I believe they are indispensable—but time prevents including them in this paper. I might note that much of my discussion will be in terms of savings behavior, the reason being solely that I have been doing a fair amount of work on this aspect lately.

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USES OF PSYCHOLOGICAL TECHNIQUES

I shall focus on three of the many different applications that projective techniques have to the study of consumer behavior. They are: (1) Their use in improving the accuracy of savings and income statistics. (2) Their use in explaining consumer savings behavior. And (3) their use in forecasting changes in spending or savings patterns. In each case I shall indicate the possible uses in a general way. The discussion will touch on highlights only; in the limited time available it clearly cannot be comprehensive.

IMPROVING THE ACCURACY OF SAVINGS AND INCOME STATISTICS

To use psychological motivation techniques for improving the accuracy of statistical data may seem like a non-sequitor at first thought. Are not such techniques qualitative devices, and if so, how can they be used to improve the accuracy of quantitative data?

The answer is derived from the fact that accuracy of economic data, particularly data obtained from surveys, is a qualitative factor also, and one subject to manipulation in numerous ways. One of the least explored means is through the use of motivation techniques. Ways in which they can be used in this respect can be illustrated with reference to a pilot study presently in progress on techniques of measuring consumer debts, assets and saving. The purpose of this project, which has been financed by the Ford Foundation and which is sponsored by Consumer Behavior, Inc., is to test and develop methods for obtaining accurate, continuous and current estimates of consumer saving and related financial magnitudes principally through surveys of consumers using the panel method. Aside from the usual problems encountered in such operations, there is the central issue of developing means of evaluating the accuracy of the savings reports by individual consumer units.

Essentially, the problem is one of discriminating between four sets of data: accurate data, deliberately inaccurate data, accidentally inaccurate data, and omitted data. To the extent that families or saving reports can be classified into these four categories, the problem of securing accurate saving information can be simplified considerably.

The place where psychological motivation techniques would seem most useful is in spotting deliberately inaccurate data and, to a lesser extent, omitted data. (Accidentally inaccurate data do not seem too important, to judge by preliminary indications, for

given a basic willingness to cooperate, such errors are generally small and clustered on both sides of the true figures; the other two types of errors are much more important, for these seem to involve substantial amounts.) As yet we are only in the experimental stages and have not even set up any pilot tests; all I can do is indicate the general method of approach. This is to ask the people questions which allow them to project their personalities, so to speak, in their replies. These replies are then related to the accuracy with which certain savings items are reported—something which, at the research stage, will be known—and relationships developed between the two factors. If these relationships are sufficiently stable, further refinements should permit their use for determining *a priori* and with known probabilities the accuracy of savings data reported by individual families, given the replies to the motivation questions and perhaps certain family characteristics as well.

You might well ask, what sort of motivation questions would be appropriate in such a case? As yet, it is too early to give any definitive answer. There are various possibilities, but the one that intrigues us the most is questions having impossible or inaccurate answers. There is, for example, the error-choice technique in which the respondent is asked a question and presented with multiple choice answers all of which are either wrong or inaccurate in one way or another. The extent to which the individual selects such answers rather than admit ignorance could well be indicative of his tendency to misrepresent or omit savings data about himself.

Needless to say, this is an approach which need not be limited to data compilation problems but can have a wide variety of uses. Its validity for such purposes remains to be determined.

EXPLAINING CONSUMER SPENDING AND SAVINGS BEHAVIOR

This is the area in which motivation techniques have achieved their greatest popularity in economic and marketing studies. Since so much attention has been devoted to their uses in this regard, I shall limit myself largely to the use of these techniques in explaining savings behavior, an area which has not received too much attention until very recently. Of course, to some extent explaining spending patterns serves at the same time to explain savings patterns but this is true only to a limited extent, for expenditure studies are not meant to touch upon such decisions as the form in which saving is put, and the mechanics of savings, let alone the broader question of preferred allocation of available funds between spending and saving.

Motivation techniques can be used in two principal ways in helping to explain savings behavior. One way is to ascertain the psychological bases of savings motivations as an end in itself, namely, what are the psychological reasons that motivate some people to put all or most of their funds in savings banks, others at the same income level in life insurance, and still others in checking accounts! The area of "abnormal" savings behavior, which in economics would be more appropriately called "irrational behavior," is a fascinating subject of investigation and one in which little study has been done.

A current example is the rise in bank savings deposits brought about by the recent rise in interest rates paid by banks on savings accounts. The increase, generally from 2.5 per cent to 3.0 per cent, did not move this rate much out of line with other yields obtainable on investments. Yet a substantial rise in savings deposits has apparently resulted, and at least part of it, to judge from various reports, is money which had never before been invested. Why a 30 per cent rate should bring about such behavior is clearly a puzzle.

The second main purpose that motivation techniques can serve in this area is to check the validity of the reasons people give for saving in the more usual economic and marketing surveys. In effect, this would involve checking the consistency of reasons given in these surveys with reasons given in answers to projective questions on more or less the same subject.

To what extent is it true, for example, that people save in order to provide security for themselves and their families, whereas in fact some have so much savings already that they live on a very good scale well within the interest on their capital? Or, to what extent do many people really believe that they don't have to save because if anything happens to them it will also happen to millions of other people, and the government will then step in and bail everyone out?

From an economics and business point of view, these are very important questions, to which motivation techniques can make some contribution.

In this area as well as in others, there exist different levels, or dimensions, of motivation—some economic, some psychological; some relatively superficial, some deep-seated. From an analytical point of view, each dimension of motivation can serve a different purpose, and what may be superficial in one sense may nevertheless be highly useful for certain uses. The relationships between these different dimensions of motivation is another fruitful field of study, one that might be pursued very effectively through the use of the panel technique.

This brief review necessarily omits many other important aspects of savings behavior which need to be explored, and which will be explored within the next few years. To some, though not all, of these aspects, psychological motivation techniques can be of value, and it is my opinion that they are of most value when related to actual past or current situations of the respondent rather than to hypothetical situations. In either case, however, these techniques seem to me more useful for suggesting hypotheses for further large-scale investigation than as providing conclusive answers in themselves.

FORECASTING

Forecasting changes in spending or savings is clearly not unrelated to explaining such changes, on the presumption that if such changes can be explained, the forecasting problem becomes more amenable to solution. It is certainly true, nevertheless, that explanation of behavior and forecasting of behavior may be independent of each other, and have been so to some extent in the past. Thus, much successful forecasting has been predicated on the extension of certain time trends, though the reasons for these trends have not always been clear. At the same time, the causes for certain changes in business activity or in consumer behavior can often be pinpointed neatly in retrospect though their recurrence may be unpredictable.

Now, how can motivation techniques be of use in helping to forecast changes in consumer spending? One answer obviously lies in the light they may throw in explaining past changes in consumer spending, subject to the restriction that such changes can be translated into prediction mechanisms. More directly, however, motivation techniques may be of use in conjunction with forecasting procedures based on study of individual behavior. For illustrative purposes, I should like to concentrate on one such forecasting procedure. It is a procedure which I proposed about two years ago and which possesses the unusual characteristic of never having really failed. The fact that it has never as yet been tried out is, of course, incidental.

The basis for this approach lies in dividing future purchases of a certain good into three categories: "Necessity purchases"—not planned and not postponable; "impulse purchases"—not planned and postponable; and purchases planned and fulfilled.

The procedure involves, in brief, setting up a continuous consumer panel operation and on the basis of periodic interviews with the sample families predicting how many, if any, purchases of a

particular good falling in each of the three categories are likely to be made by each family during a forthcoming interval. The total forecast is then the aggregation of the purchase forecasts for individual families and individual categories.

The crux of this approach lies clearly in the accurate prediction of purchases in each of the three categories, and this in turn depends in part on obtaining operational definitions for each category. For the present purposes our definitions do not have to be too rigorous, and we shall define the terms roughly as follows: *Necessity purchases* are those which, if not made at the particular time, would interfere with what might loosely be described as "the regular and established routine of the family." *Impulse purchases* can then be defined as all other purchases which are not planned. *Planned purchases* can be defined as those for which an intention to buy was reported on at least one interview prior to the actual purchase.

Rough as they are, these definitions serve to make clear the reason for the three-way classification of purchases, namely the classification serves to segregate purchases into more homogeneous groups from the point of view of forecasting, the specific forecasting methods differing with each category. Thus, necessity purchases by definition will be largely urgent in nature and, except for goods subject to marked seasonal casualty rates such as furnaces, are likely to be fairly constant from month to month. The average level of such purchases can therefore probably be predicted by developing multiple regression relationships involving such factors as seasonal patterns, current stock in the hands of consumers, preferably the age distribution as well, and current changes in income and financial status.

Purchases for which plans were made in advance would be predicted on the basis of purchase plans reported by the panel members, including certain characteristics of these plans—degree of certainty, planning horizon, financial status of family, etc. An experimental panel operation conducted a few years ago points to the feasibility of segregating purchase plans that will be fulfilled from those that will not.

Impulse purchases, by their very nature, would be the most difficult to predict. For some goods, such purchases are negligible and need little attention. For many other goods, however, impulse purchases form a substantial proportion of the total, and success or failure of this entire method of approach depends on accurate prediction of this proportion.

The solution in this case seems to lie in observation of the nature and circumstances of respondents' impulse purchases through

the panel method, and the development of relationships between such purchases and family characteristics, purchase habits, attitudes and purchase motivations. Once such relationships are obtained, impulse purchases for a particular family, or for a group of families of the same type, could be predicted on the basis of advance knowledge of these other factors, which presumably would be far more stable than purchases.

This frame work, though rather sketchy, does serve to indicate how motivation techniques can be used in such a forecasting situation. Motivation for impulse purchases is clearly a major area of study, for a major hope of improving the predictive accuracy of impulse purchases would seem to lie in detecting and segregating motivational patterns that lead to such purchases and classification of families by such patterns. Study of the motivations underlying impulse purchases may well lead to still other means of predicting such purchases.

Motivation techniques can also assist to sharpen the definitions of the three categories of purchases, in part by placing on a more operational basis definitions of such terms as impulse purchases and necessity purchases; they may even point to the desirability of further stratification of purchases. In addition, motivation techniques can be of value in studying the extent to which purchases are both planned and reported as planned, and particularly why some families will have fairly complete purchase plans to report while others with much the same economic status report almost no purchase plans.

What it all comes down to is that motivation techniques constitute a useful supplementary set of tools in economic and marketing analysis. As far as I am concerned the emphasis is on "supplementary," not "substitute." Rarely can such techniques be substituted for other techniques, and rarely if ever does their use provide a complete solution to a problem. Certainly anyone who uses one set of analytical tools to the exclusion of others, even to solve so-called "why" questions, is not getting the most effective results. Motivation techniques in marketing and economic studies are supplementary in nature to other techniques; they are not substitutes.

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BRANDED AND COMPANY IMAGES CHANGED BY ADVERTISING

CHARLES E. SWANSON*

The Curtis Publishing Company

THIS paper describes a measure of intensity and a model for the study of how a consumer image changes. A company's qualities or a product's features may be judged by the consumer to show how they fit the consumer's image of an ideal company or of an ideal product. Later you will see how the image of an ideal product changes after exposure to advertising. Change in a consumer image might also be related to use of a new product or experience with a new design of an established brand.

In this report to you we hope to do two things: first, describe a measure of intensity; and second, outline a model for the study of change in a consumer image. In the specific study our aim was this: We wanted to know more about how advertising changes a consumer image and how these changes relate to several measures. For example, can advertising increase the maximum price consumers will pay for a brand?

Let's assume that the consumer has an image of an ideal product. Companies and products, packages and advertising appeals are judged as they measure up to this consumer image of a best possible product. This ideal image is a complex of attitudes, or mental habits, which, if aroused, may lead to action. We wish to find how advertising appeals or product features fit this image of an ideal product. This is our procedure:

First, we may sample advertising appeals from advertisements. We may select ideas from other sources. Each appeal, word or idea is typed on a card.

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Second, we show the consumer a graphic scale. This is a measure of intensity. The consumer is asked to rate each word or idea on how strongly she feels it does or does not apply to what she wants in a best possible product. This gives us the image of the ideal product.

Third, the consumer again rates each word or idea on how it applies to a brand or the product now in use. This is the image of a product in use or of a brand.

Fourth, the consumer is exposed to advertising or has some experience with a product or a brand.

Fifth, the consumer again rates each word or idea on how it applies to the product or brand as advertised. This is the advertised image.

Sixth, the consumer rates each word or idea on how it applies to the ideal product. We now have the ideal product image after exposure to advertising or after experience with a brand or product.

You may study one or more of these consumer images: The image of an ideal product, the image of a brand or product in use, the advertised image of a brand and the image of an ideal product after exposure to advertising.

Before we look at the graphic scale used in this model, let's emphasize what we assume we're measuring: intensity. We assume that the stronger you feel about preferring or liking a brand or product, the more likely you are to use this brand. In the studies we have done so far, this has been true. Studies in other areas bear out this finding. Studies at the University of Minnesota some years ago showed that preference on a rating scale predicts newspaper reading. More recently, army research people found preference on a rating scale predicts food consumption. In one study correlations between preference and food consumption ranged from .69 to .81.

Figure 1 is one of several rating scales you might wish to use as a measure of intensity. The +4 and +5 points are most likely to relate to some behavior such as use of a product. Let's call these top points the "action zone." The more people an advertising appeal can move into the "action zone," the more effective that advertising appeal, other things being equal. More about this in a few minutes.

First, you instruct the consumer on use of the scale. You "anchor" the scale in the individual's experience with this instruction:

> "Now please think of the best possible oleomargarine. (SHOW RESPONDENT RATING SCALE) I want you to

think of the one thing that you feel most strongly the best possible margarine should have. What would this one thing be? (RECORD COMMENT) Now according to this scale, that would have a plus 5 rating in your mind." All judgments were made by placing each card with an advertising theme on a graphic scale (as shown in Figure 1).

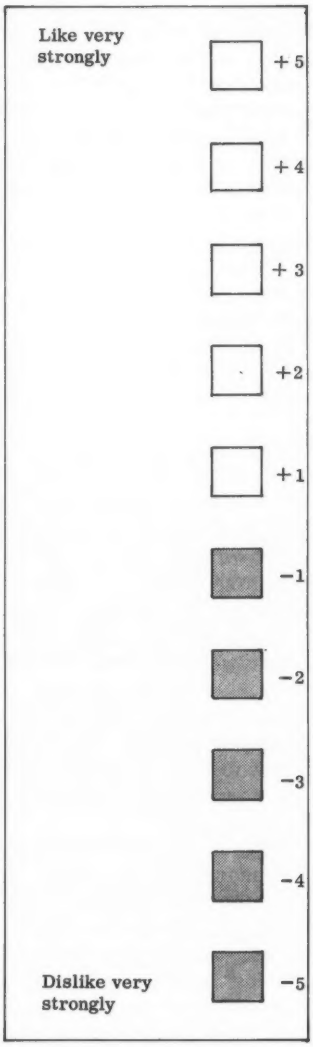
You do this again for the minus 5 rating. The consumer is now ready to judge each of 30 to 50 advertising appeals or themes or ideas on how they apply to an ideal image of a product.

Let's turn now to the four consumer images and the question of whether advertising influences the consumer's ideal image of a product.

Figure 2 is a consumer's image of a best possible product, a margarine in this case. On the left side you see the advertising appeals and other ideas. At the top you see the intensity score ranging from minus 5 on your left to plus 5 on your right. For example, this reads as follows:

These housewives felt very strongly with a mean score of 4.8 that they wanted the quality of FINE TASTE in the best possible margarine.

You see that other appeals wanted most strongly were NUTRITIOUS, ECONOMY, FLAVOR, ENRICHED, etc.



Rating Scale for Intensity

Figure 1

BEFORE: THE BEST POSSIBLE MARGARINE
TOTAL
Very Strongly
-5 -4 -3 -2 -1
+1 +2 +3 +4 +5
Very Strongly
Fine taste
Nutritious
Economy
Flavor
Enriched
Spreads more easily and smoothly
Smooth
Better for freshness
Costs less
Sweet and delicate taste
All the valuable food energy
Spreads smooth when cold
All the vitamins
Perfect flavor
Rich flavor
Wrapped in foil
It's even digestible for babies
All the milk minerals
All the calcium
Familiar, delicious flavor
Gives 62% of your child's daily needs of vitamins A and D
Keeps form when warm
Contains vitamin E
Unconditionally guaranteed to taste like the high-priced spread
Double wrapped
Four times more vitamin D
Double wrapped in golden foil
Golden vitamin A of carrots
Natural color
A burst of sunny sweet flavor
Only fresh made salad oils
Tantalizing flavor
Incomparable flavor
Lots of sweet skim milk
World's most modern spread
Leading
Heavenly aroma in cooking
Unmistakable flavor
New
The only acceptable taste for a table spread
Delicate and perishable
Ordinary
A poor substitute
Tears fresh bread
Greasy
Flat taste

Figure 2

What purposes does this ideal image serve? It's a map of the consumer image. It shows consumer motives in perspective. This is the research report, a profile of how strongly the consumer wants or does not want these qualities in a product. This profile serves as a way to aid decisions. It is a basis for discussion. It is a source of ideas. It is a quick and direct way to get research ideas across to creative people, copy writers or artists, and to management. They begin to select themes or product features the way that consumers select products or advertising appeals.

Another use of the ideal image is to find how different qualities of a product appeal to different types of consumers. Figure 3 shows how heavy and light users differ by themes or product qualities. Which themes will appeal to heavy users? Which themes to light users?

You will remember an earlier reference to motivation mix. Most consumer products appeal to more than one need. For example, oleomargarine appeals to hunger, flavor-taste and appearance needs. Each of these appeals aims at the flavor-taste need. But each is stated differently. Each offers a slightly different motivation mix. In average score these range from FINE TASTE to THE ONLY ACCEPTABLE TABLE FOR A TABLE SPREAD. Figure 4 suggests that the motivation mix may vary widely . . . even for a single theme such as flavor or taste.

Figure 5 shows the consumer's image of the margarine she uses most often. You can see how it compares with the image of the ideal margarine.

Note those points where the two images are farthest apart. Those differences are important to marketing executives hunting for ideas. Large differences show that the consumer wants something—in the ideal product—and feels she isn't getting it in the product she's using. Here some of the biggest differences are on FLAVOR, PERFECT FLAVOR, RICH FLAVOR, FAMILIAR, DELICIOUS FLAVOR. These differences point to areas of consumer tension, consumer needs that are not being satisfied. Obviously, an appeal or a product which promises to satisfy these needs is more likely to lead to consumer action.

At this point in the model the consumer is exposed to a magazine. She goes through the magazine and comes to a series of advertisements on margarine. She is asked to select the advertisement most interesting and useful to her in buying margarine. She reads it for as long as it seems interesting to her. She closes the magazine. Then she judges the 45 appeals or ideas as each applies to the margarine in the advertisement.

MARGARINE USED MOST OFTEN

BY TYPES OF USERS

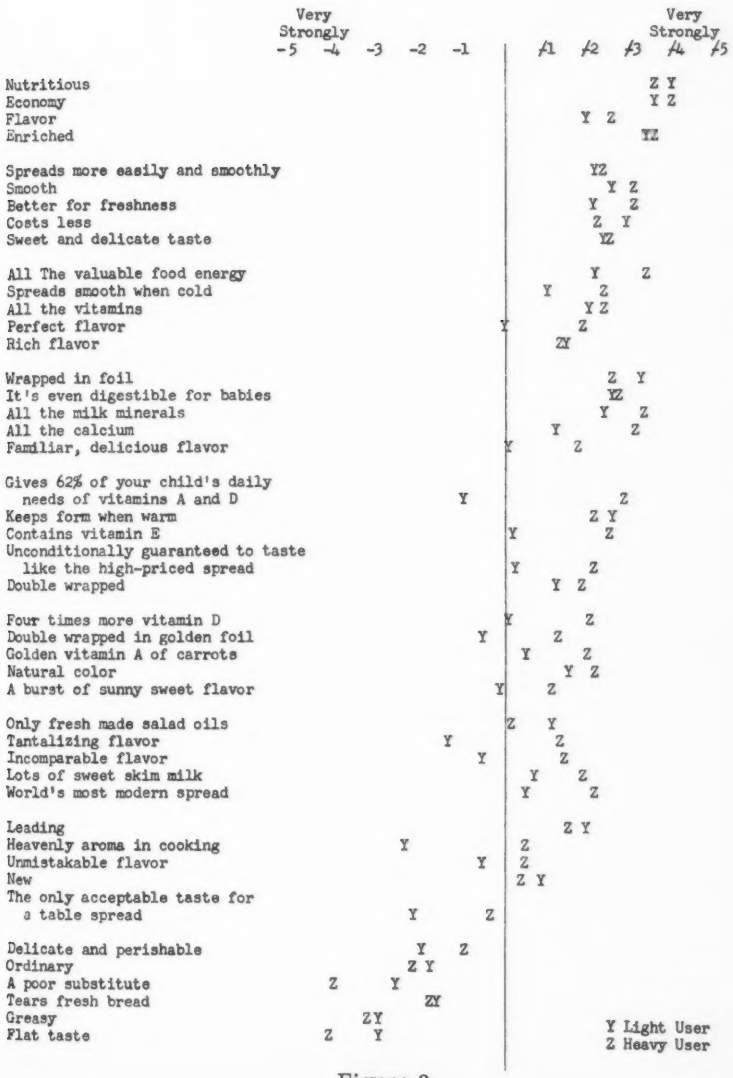
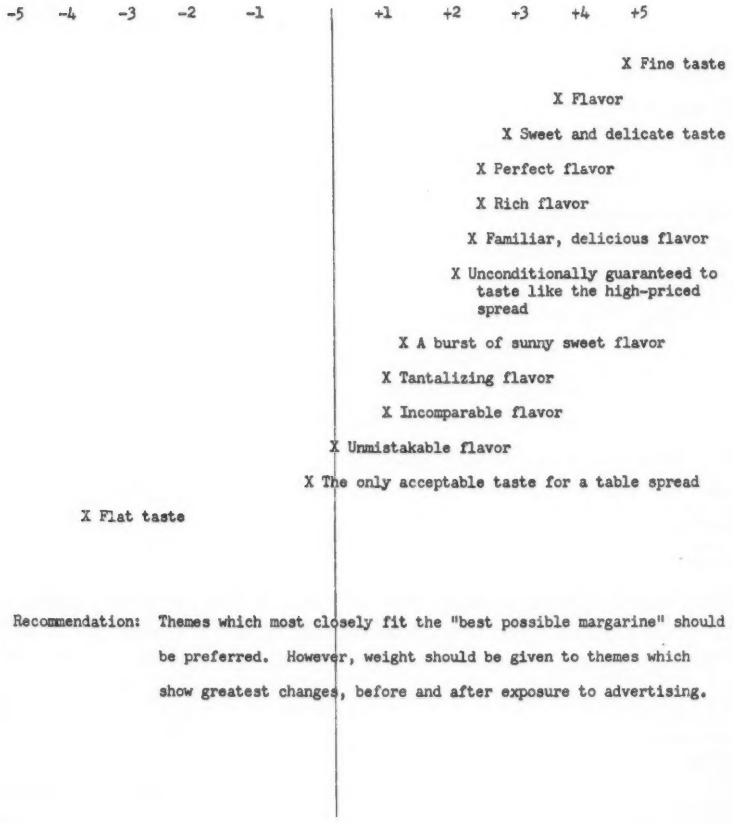



Figure 3

Finding #2. Different statements of FLAVOR theme vary widely in acceptance for "best possible margarine". They range as follows:


-5 -4 -3 -2 -1 +1 +2 +3 +4 +5
X Fine taste
X Flavor
X Sweet and delicate taste
X Perfect flavor
X Rich flavor
X Familiar, delicious flavor
X Unconditionally guaranteed to taste like the high-priced spread
X A burst of sunny sweet flavor
X Tantalizing flavor
X Incomparable flavor
X Unmistakable flavor
X The only acceptable taste for a table spread
X Flat taste

Recommendation: Themes which most closely fit the "best possible margarine" should be preferred. However, weight should be given to themes which show greatest changes, before and after exposure to advertising.

Figure 4

Figure 6 is a consumer image of a product just created by an advertisement. Several brands were used. None is identified. This is the average for the four advertisements used.

This is the advertised image. You have a measure of intensity of response to the printed image within a minimum time after

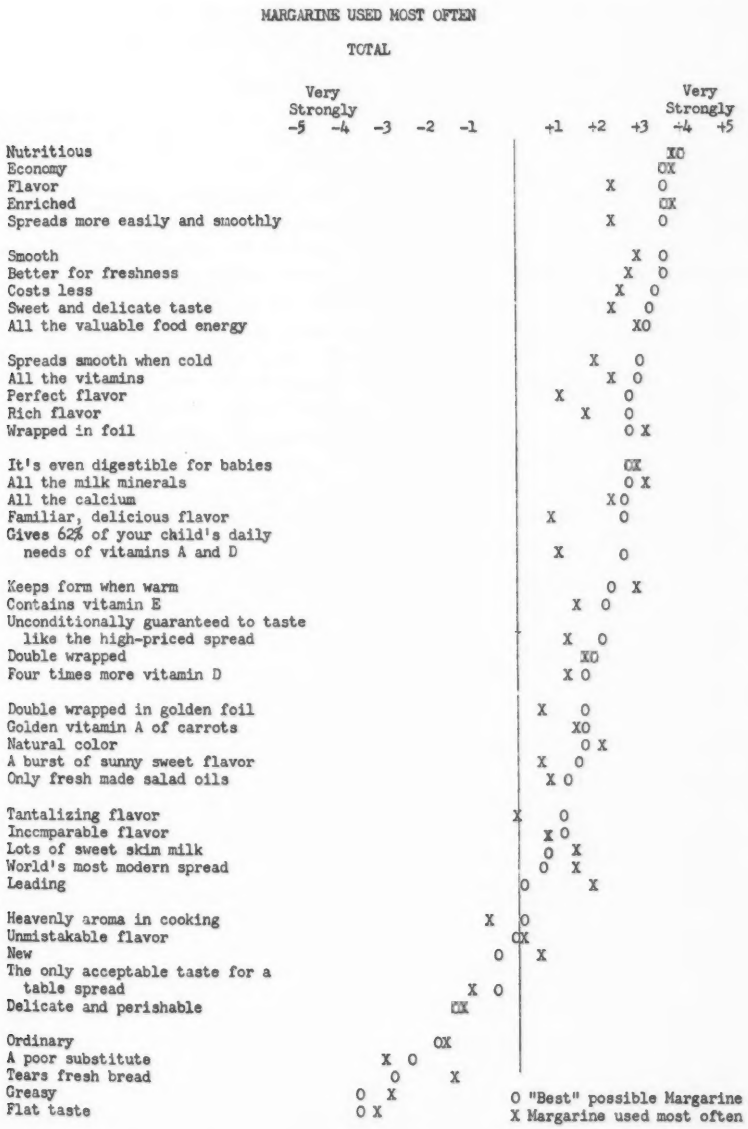

MARGARINE USED MOST OFTEN
TOTAL
Very Strongly
-5 -4 -3 -2 -1
+1 +2 +3 +4 +5
Very Strongly
Nutritious
Economy
Flavor
Enriched
Spreads more easily and smoothly
Smooth
Better for freshness
Costs less
Sweet and delicate taste
All the valuable food energy
Spreads smooth when cold
All the vitamins
Perfect flavor
Rich flavor
Wrapped in foil
It's even digestible for babies
All the milk minerals
All the calcium
Familiar, delicious flavor
Gives 62% of your child's daily needs of vitamins A and D
Keeps form when warm
Contains vitamin E
Unconditionally guaranteed to taste like the high-priced spread
Double wrapped
Four times more vitamin D
Double wrapped in golden foil
Golden vitamin A of carrots
Natural color
A burst of sunny sweet flavor
Only fresh made salad oils
Tantalizing flavor
Incomparable flavor
Lots of sweet skim milk
World's most modern spread
Leading
Heavenly aroma in cooking
Unmistakable flavor
New
The only acceptable taste for a table spread
Delicate and perishable
Ordinary
A poor substitute
Tears fresh bread
Greasy
Flat taste
O "Best" possible Margarine
X Margarine used most often

Figure 5

MARGARINES IN ADVERTISEMENTS

TOTAL

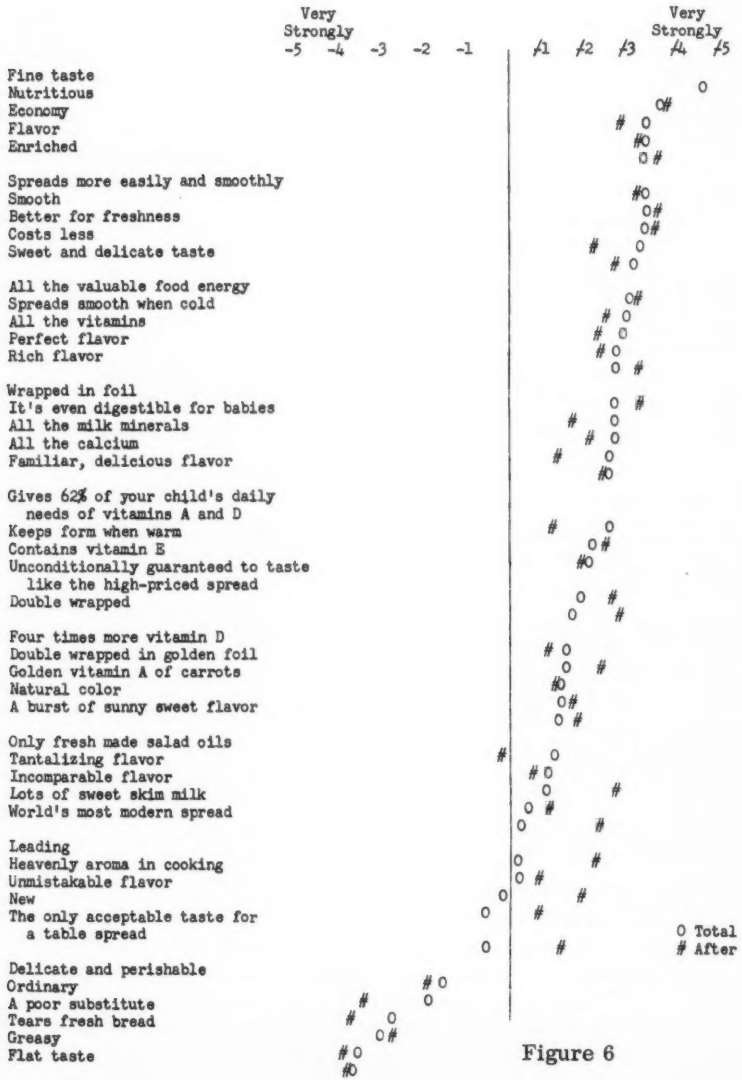


Figure 6

exposure. This figure shows you how the advertised image compares with the ideal product image.

Another comparison should be made with the image of the margarine now in use. Very quickly, 12 themes in the advertised image showed a difference of one scale unit or more, a gain over the image of the margarine now in use. Ten of the 12 themes promised flavor or taste. You may be interested in knowing that one of the advertisements was for a new margarine with the headline, "Unconditionally guaranteed to taste like the high-priced spread."

Incidentally, one of our early image studies arose when a proposed advertising theme was questioned. We did 105 interviews and the advertising agency did 45 interviews. Despite differences in areas and populations represented, the two studies showed high agreement in the findings on the images and on the proposed theme. The theme was adopted and the campaign is still running.

You have seen three images: Ideal product, product in use, advertised product. What's happened to the consumer image of the ideal product? Is it the same after exposure to advertising?

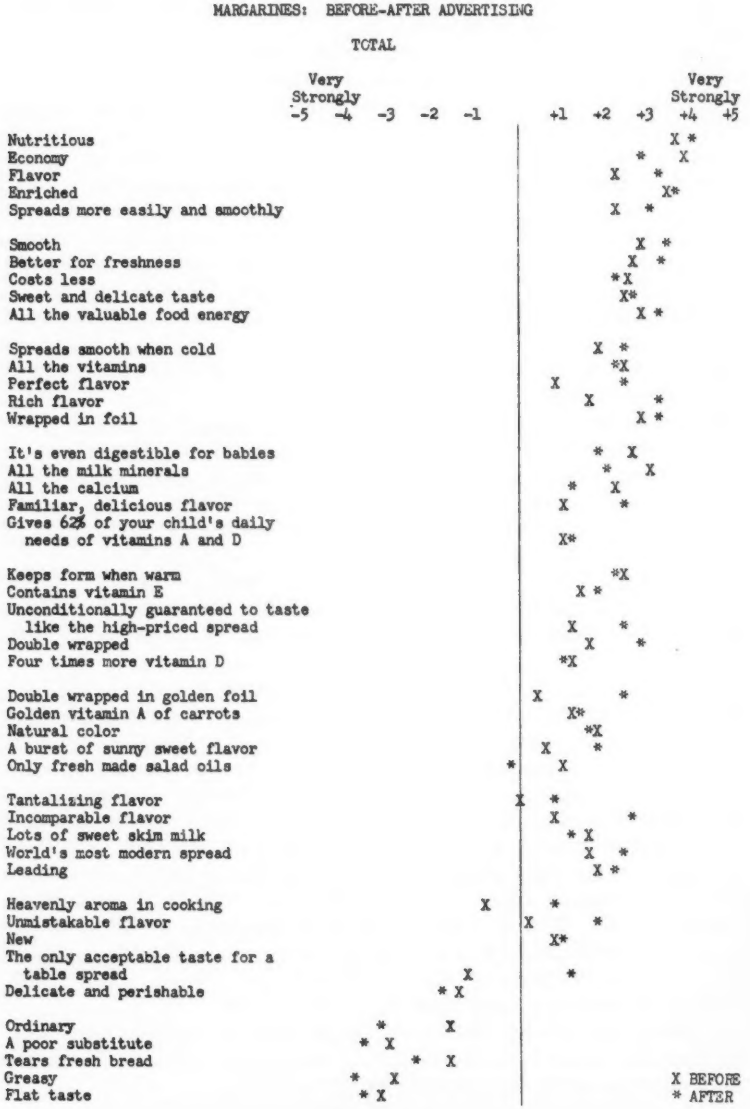
Figure 7 shows the ideal margarine image before and after exposure to advertising. Sixteen themes showed a gain of one scale unit or more after exposure to the printed image of margarine. In this—and in other studies—the gains were made on themes in the advertising.

From this and other studies we conclude: The printed image of a brand or product can change the consumer's image of an ideal product.

Another way to analyze advertising appeals in a campaign is to find, on each theme, how many people change to maximum intensity or the plus 5 point on the rating scale. Five appeals from one campaign were compared on this basis: The per cent of people wanting each quality at plus 5 in the best possible product before and after exposure to the printed image. UNMISTAKABLE FLAVOR gained from 8 to 22 per cent in consumers wanting it most strongly in the best possible margarine; HEAVENLY AROMA IN COOKING gained from 14 to 26 per cent; THE ONLY ACCEPTABLE TASTE FOR A TABLE SPREAD gained from 16 to 24 per cent; INCOMPARABLE FLAVOR gained from 12 to 32 per cent; and UNCONDITIONALLY GUARANTEED TO TASTE LIKE HIGH-PRICED SPREAD gained from 24 to 56 per cent.

These five themes in this campaign together induced more than half of the consumers to change to maximum intensity on one or more themes after exposure to the advertising.

Of course, no one measure is sufficient in itself to aid in evaluating an advertising theme or a product quality. If there are


MARGARINES: BEFORE-AFTER ADVERTISING
TOTAL
Very Strongly
-5 -4 -3 -2 -1
+1 +2 +3 +4 +5
Very Strongly
Nutritious
Economy
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Costs less
Sweet and delicate taste
All the valuable food energy
Spreads smooth when cold
All the vitamins
Perfect flavor
Rich flavor
Wrapped in foil
It's even digestible for babies
All the milk minerals
All the calcium
Familiar, delicious flavor
Gives 62% of your child's daily needs of vitamins A and D
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Heavenly aroma in cooking
Unmistakable flavor
New
The only acceptable taste for a table spread
Delicate and perishable
Ordinary
A poor substitute
Tears fresh bread
Greasy
Flat taste
X BEFORE
* AFTER

Figure 7

THE ONE KEY WORD

	Best Possible Margarine (Before)	Margarine Used	Margarine In Advertisements	Best Possible Margarine (After)
Fine Taste	30%	-	-	-
All the Valuable Food Energy	12	12%	6%	8%
Economy	10	19	-	2
Unconditionally Guaranteed.....	10	6	20	16
Spreads more easily and smoothly	6	3	2	2
Nutritious	4	3	2	14
All the Vitamins	4	6	8	6
Double wrapped in Golden Foil	-	6	12	4
Perfect Flavor	-	6	2	10
Costs Less	-	6	2	4
Wrapped in Foil	-	6	2	4
Rich Flavor	-	6	4	-
Ordinary	-	6	-	-
Gives 62% of your Child's daily needs...	-	-	10	6
Spreads smooth when cold	-	-	6	-
Sweet & Delicate Taste	-	-	-	8
	50=100%	33=100%	50=100%	50=100%

Figure 8

changes in intensity in the consumer image after exposure to advertising, would they relate to other measures? In this study three other measures were used: Change in salience, or importance; recall, at five cents for each detail remembered from the advertising; and change in psychological value, or the most the individual was willing to pay for the product.

You remember each person judged each theme or idea on four images. As she finished each image, she was asked which one word or phrase she felt MOST STRONGLY described that image. In other words, which one word or phrase MOST STRONGLY described what she wanted in the best possible margarine. This is a measure of salience or importance or what's first with the consumer. Figure 8 (on preceding page) shows how the importance of the themes changed from image to image. In the ideal product image you see how the largest changes occurred in the headline theme, in NUTRITIOUS and PERFECT FLAVOR.

At the end of the interview the consumer received a nickel for each detail she remembered from the advertising. This technique was developed by Max Ule and his associates at Kenyon & Eckhardt. These housewives remembered an average of seven details from the advertisement.

Figure 9 shows that a theme may not be so intensely wanted in the ideal margarine but it may be more easily remembered. For example, note NUTRITIOUS and KEEPS FORM WHEN WARM.

In general, those themes wanted most intensely were more often remembered.

At the opening and close of the interview this control question was asked. "On the average what is the most you'd be willing to spend for a cold cereal?" As you'd expect there was no change in the maximum price for cold cereal.

But what happened when the same question on maximum price was asked for margarine? We found a significant and important increase in the willingness to pay 25 per cent more for margarine after exposure to the advertising. This and other studies show how advertising may increase the maximum price consumers will pay for an advertised brand.

The changes in intensity on themes in the ideal product after exposure to the advertising seem to relate to changes in salience and in the psychological value of the product. In general, it is also true that the themes wanted most intensely were more often remembered.

We can conclude from this and other studies that changes in the consumer image of an ideal product were influenced by advertising.

Finally, one might ask whether the image of a brand relates to its share of its market. If Brand B has an image closer to the ideal image of a product than Brand A, is Brand B likely to have a greater share of a market?

Figure 10 shows that the image of brand A does not agree too closely with the consumer image of the ideal product, while

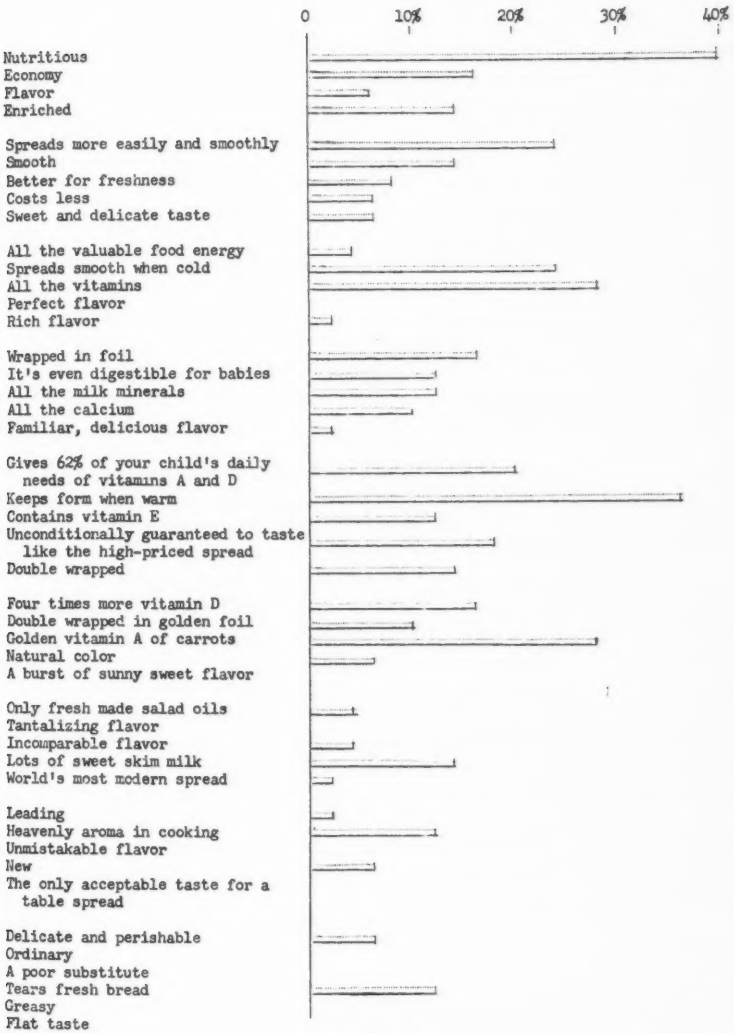
PHRASES RECALLED FROM ADVERTISEMENTS
AT FIVE CENTS EACH
0
10%
20%
30%
40%
Nutritious
Economy
Flavor
Enriched
Spreads more easily and smoothly
Smooth
Better for freshness
Costs less
Sweet and delicate taste
All the valuable food energy
Spreads smooth when cold
All the vitamins
Perfect flavor
Rich flavor
Wrapped in foil
It's even digestible for babies
All the milk minerals
All the calcium
Familiar, delicious flavor
Gives 62% of your child's daily needs of vitamins A and D
Keeps form when warm
Contains vitamin E
Unconditionally guaranteed to taste like the high-priced spread
Double wrapped
Four times more vitamin D
Double wrapped in golden foil
Golden vitamin A of carrots
Natural color
A burst of sunny sweet flavor
Only fresh made salad oils
Tantalizing flavor
Incomparable flavor
Lots of sweet skim milk
World's most modern spread
Leading
Heavenly aroma in cooking
Unmistakable flavor
New
The only acceptable taste for a table spread
Delicate and perishable
Ordinary
A poor substitute
Tears fresh bread
Greasy
Flat taste

Figure 9

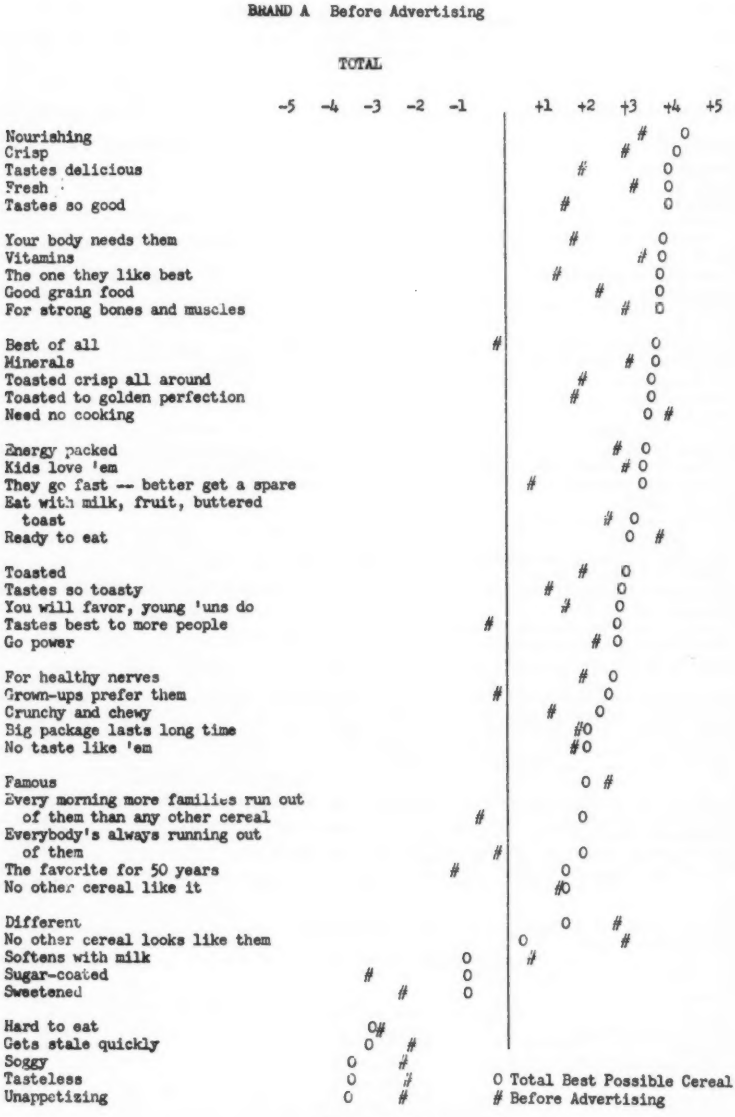
BRAND A Before Advertising
TOTAL
-5 -4 -3 -2 -1 +1 +2 +3 +4 +5
Nourishing
Crisp
Tastes delicious
Fresh
Tastes so good
Your body needs them
Vitamins
The one they like best
Good grain food
For strong bones and muscles
Best of all
Minerals
Toasted crisp all around
Toasted to golden perfection
Need no cooking
Energy packed
Kids love 'em
They go fast -- better get a spare
Eat with milk, fruit, buttered toast
Ready to eat
Toasted
Tastes so toasty
You will favor, young 'uns do
Tastes best to more people
Go power
For healthy nerves
Grown-ups prefer them
Crunchy and chewy
Big package lasts long time
No taste like 'em
Famous
Every morning more families run out of them than any other cereal
Everybody's always running out of them
The favorite for 50 years
No other cereal like it
Different
No other cereal looks like them
Softens with milk
Sugar-coated
Sweetened
Hard to eat
Gets stale quickly
Soggy
Tasteless
Unappetizing
O Total Best Possible Cereal
Before Advertising

Figure 10

Figure 11 shows that the image of Brand B does agree more closely with the consumer image of the ideal product. This brand has much the greater share of the market.

In closing, let me comment on advantages and disadvantages of this type of research and on some of its uses. This is a tool for diagnosis and experiment. This is a way to identify consumer motives and consumer types. The consumer image model gives you more information per interview than the yes-no type of question. You can get as many as 240 responses per interview. From 100 such interviews you have 24,000 responses to analyze. This model has advantages in accuracy and precision, in sensitivity and comparability. It reduces variance. It allows you to use efficient experimental procedures such as balanced design and sequential sampling. It opens opportunities for experiments in pre-testing. Some consumer homes may become your laboratory. But not all.

Disadvantages? This is a method for diagnosis. It takes time. It requires the best of interviewers. The lower 20 per cent of the population in intelligence and education lack the verbal skills to participate. A series of such studies is needed rather than one study. Finally, measures and model can only approximate the real life situation.

So much for advantages and disadvantages. These are a few possible uses for this model: Aiding creative and management judgment in achieving the best motivation mix for an advertising campaign. Estimating how product changes will appeal to various consumer types. Developing new products. Comparing images of competing brands. Evaluating a company's policies and its corporate public relations and advertising. Providing a map of the consumer images so executives may make decisions more swiftly, more accurately. Building a theory for what may be called image analysis.

In summary, two ideas have been suggested to you for estimating more accurately some of the influences of advertising and products upon consumer behavior. First, a measure of intensity was described. Second, a model for studying the consumer's image was presented and some findings outlined. If you use and improve upon measure or model so some small contribution is made to the efficiency of marketing, then our purpose in this research will be served.

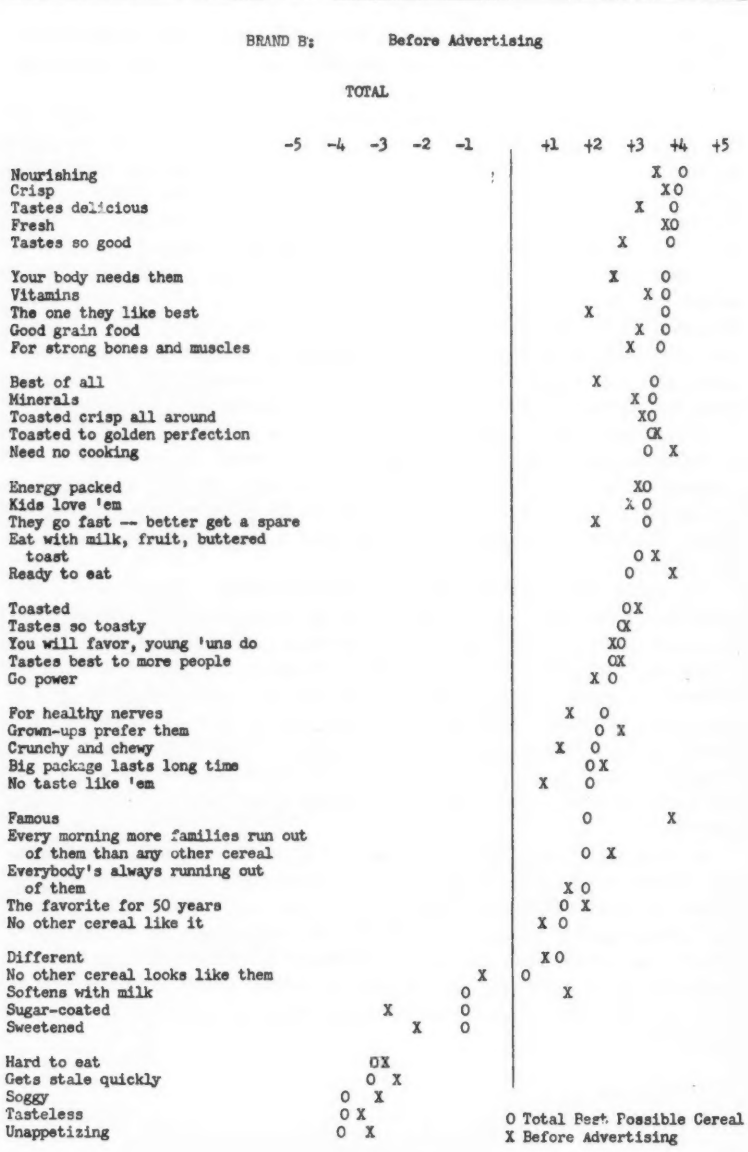
BRAND B: Before Advertising
TOTAL
-5 -4 -3 -2 -1 +1 +2 +3 +4 +5
Nourishing
Crisp
Tastes delicious
Fresh
Tastes so good
Your body needs them
Vitamins
The one they like best
Good grain food
For strong bones and muscles
Best of all
Minerals
Toasted crisp all around
Toasted to golden perfection
Need no cooking
Energy packed
Kids love 'em
They go fast -- better get a spare
Eat with milk, fruit, buttered toast
Ready to eat
Toasted
Tastes so toasty
You will favor, young 'uns do
Tastes best to more people
Go power
For healthy nerves
Grown-ups prefer them
Crunchy and chewy
Big package lasts long time
No taste like 'em
Famous
Every morning more families run out of them than any other cereal
Everybody's always running out of them
The favorite for 50 years
No other cereal like it
Different
No other cereal looks like them
Softens with milk
Sugar-coated
Sweetened
Hard to eat
Gets stale quickly
Soggy
Tasteless
Unappetizing
O Total Best Possible Cereal
X Before Advertising

Figure 11

33

PSYCHOLOGICAL RESPONSE PATTERNS OF CONSUMERS

ARTHUR KOPONEN*

J. Walter Thompson Company

WE hear a great deal about brand images as a framework for the advertising appeals of some products. The role of brand images in advertising and marketing undoubtedly reaches its height when competing brands are very much like one another. The consumer, in making a choice, must of necessity base his selection on factors other than the physical properties of the brand. If the consumer were to judge a brand strictly on physical qualities, in many cases he wouldn't be able to tell the difference between one brand and another. Advertising, merchandising and packaging influence his judgments of the product and his purchase of one brand over the other.

Advertising's role in brand image development is to create, change and control a product's image. The objective in creating or changing a brand image is to develop the image that will be most effective in producing sales among the best potential customers for the product. However, it is not very helpful to know that your product is considered young or old, modern or old-fashioned, hot or cold, sophisticated or a wet smack, unless image measures, obtained by objective research methods, can be related to sales and point to a course of action that can be taken by the advertiser.

In creating brand images we want a brand expression that will be appealing to and compatible with the personalities of our potential customers. In other words, the personality of the brand should fit the psychological needs of the potential customer. It is

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easier to create or change a brand image than it is to change the existing needs and values of people, although somethimes it is necessary for advertising to lead the consumer by creating and changing needs. Therefore, we not only have to know what the image of our brand is, but also what the psychological needs are of the people who make up the market and how they will respond. We want to know how potential customers differ in their psychological responses compared to other people. They must differ in some way, for if they didn't, everyone would tend to buy the same brand. If we can learn the psychological needs and responses of our best prospects, we are in a better position to influence them through advertising.

Our behavior is oriented toward fulfilling various needs. Psychological needs give both direction and "push" to human behavior. Needs are related both to the direction of our actions and also to the force with which we act. Needs will vary within individuals from time to time and from situation to situation. But apparently there are general psychological needs which are more or less characteristic of different individuals. Some people have a stronger need to dominate than others, some people have a greater need for new things, and so on. All basic psychological needs exist in everyone to some degree, but people differ in the relative strength of their needs just as they differ in other things.

At J. Walter Thompson we are experimenting with a system of classifying our consumer panel members according to responses to questions expressing psychological needs. Although a list of psychological needs can be almost limitless, we have selected as a starting point a standard psychological test which measures fifteen expressed needs. The measures indicate the needs that people express, what they want and values they consider important. The test scores do not necessarily indicate how people behave, but rather how they express their needs. This is important in advertising, for it tells us how they like to think of themselves. It is also important because we get a measurable response that can be related to buying behavior.

The J. Walter Thompson Consumer Panel is made up of over 5,000 families located throughout the United States. We know quite a bit about these families: their income, family composition, ages of household members, education, occupation, the products they buy, how often they buy, where they buy, what they own, the magazines they read, the TV shows they watch, and so on. This information is kept on a continuing basis so trends can be watched, audiences can be accumulated, and relationships between various factors can be observed.

XUM

The test of psychological needs, added to these other measures, was completed by 97 per cent of female household heads and 89 per cent of male household heads, a total of over 8,900 respondents. Each of the respondents answered 225 questions. We were then able to further classify panel member responses according to fifteen expressed psychological needs. The questions consisted of pairs of equally desirable alternatives, each alternative representing a given need.

When the tests were scored, we were able to define various segments of the market according to responses to expressions of psychological needs in the same way that we describe the market according to other characteristics. The information is kept on IBM cards enabling us to analyze the results in various ways.

I would like to give you examples of a few of the expressed needs which we measured and a few of the results we obtained.

People who have a high need for *association* like to do things with other people rather than to do them alone, they like to form friendships and are oriented toward people. Like all needs, everyone has this to some degree. Here we simply want to measure which groups in the population have a relatively high or low need for association.

We found that women were significantly higher on their expressed need for association than men were. (See Figure 1.) The older age groups (55 and over) both among men and women have a particularly high need for association. In another study it was found that high school students and teenagers are also high on the need for association. The need for association does not differ significantly by education among adult household heads. The need for association reaches its peak in small towns (under 50,000); it is highest in the southern region and lowest in the East.

The need for *dominance* expresses the feelings of wanting to lead, supervise, influence and control others. Figure 2 shows that men are significantly higher than women on this expressed need for dominance. Dominance seems to be strongly related to education and income. The expressed need for dominance is strongest among the college educated and those in families with incomes of over $7,000. Dominance is also stronger among the younger males but does not differ significantly among females by age. Dominance is highest in the big cities and in the East and West.

The next need is the need for *analysis*—the need to understand people and wanting to learn what makes them tick. The need for analysis is slightly greater for females than it is for males (see Figure 3); however, the difference between them is not very large. There were no significant differences in the need for analysis by

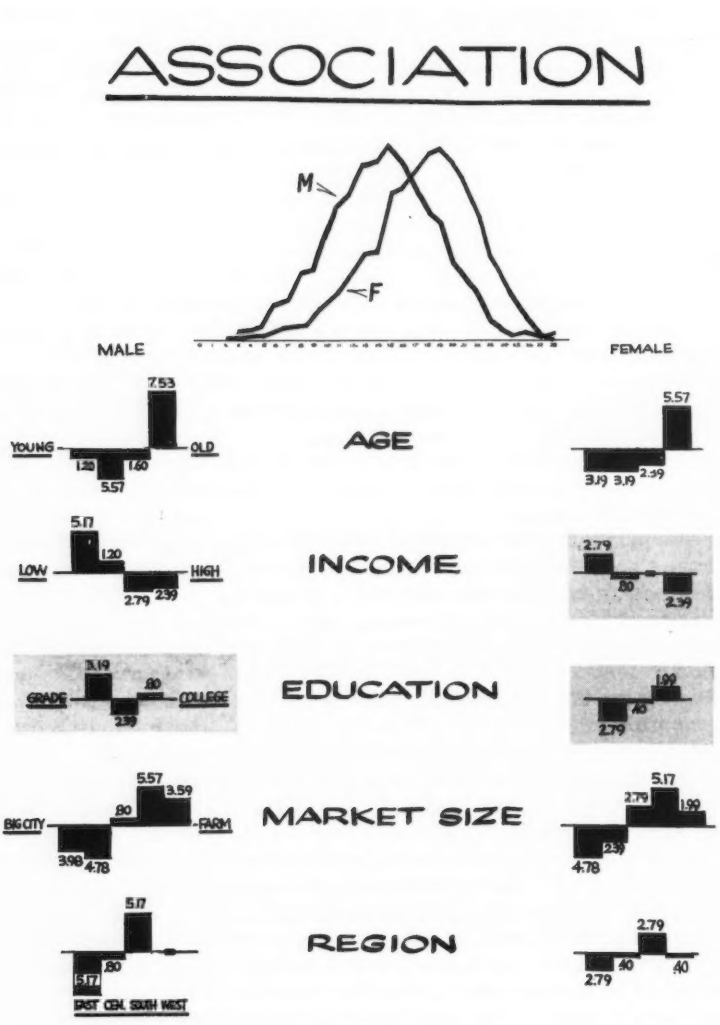
ASSOCIATION
M
F
MALE
FEMALE
7.53
YOUNG
OLD
1.20
1.60
5.57
5.57
3.19
3.19
2.39
AGE
5.17
LOW
HIGH
1.20
2.79
2.39
2.79
.80
2.39
INCOME
3.19
GRADE
COLLEGE
.80
2.39
1.99
.40
2.79
EDUCATION
5.57
3.59
BIG CITY
FARM
.80
3.98
4.78
5.17
2.79
1.99
2.39
4.78
MARKET SIZE
5.17
.80
1.17
EAST CEN. SOUTH WEST
2.79
.40
.40
2.79
REGION
DIFFERENCES BETWEEN GROUPS
NOT SIGNIFICANT AT THE .001 LEVEL

Figure 1

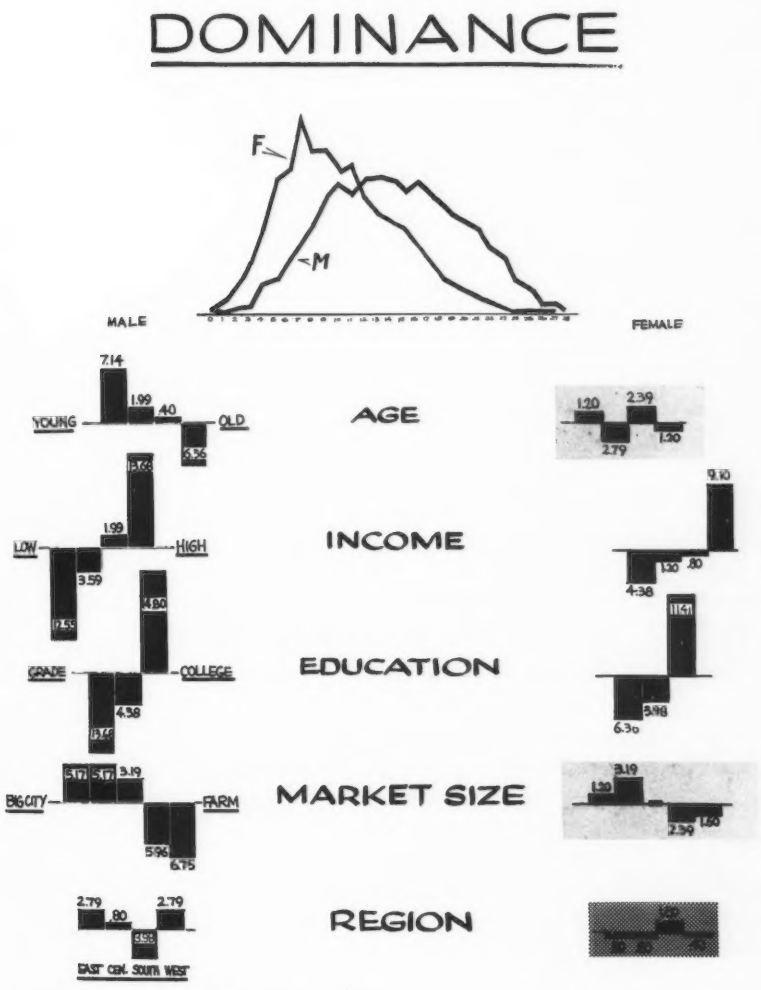
DOMINANCE
F
M
MALE
FEMALE
7.14
1.99
.40
YOUNG
OLD
6.36
1.20
2.39
2.79
1.30
AGE
1.99
LOW
HIGH
3.59
9.10
1.30
.80
4.38
INCOME
4.30
GRADE
COLLEGE
4.38
11.61
3.98
6.30
3.19
BIG CITY
FARM
5.96
6.75
3.19
1.20
2.39
1.60
MARKET SIZE
2.79
.80
2.79
EAST CEN. SOUTH WEST
REGION
DIFFERENCES BETWEEN GROUPS
NOT SIGNIFICANT AT THE .001 LEVEL

Figure 2

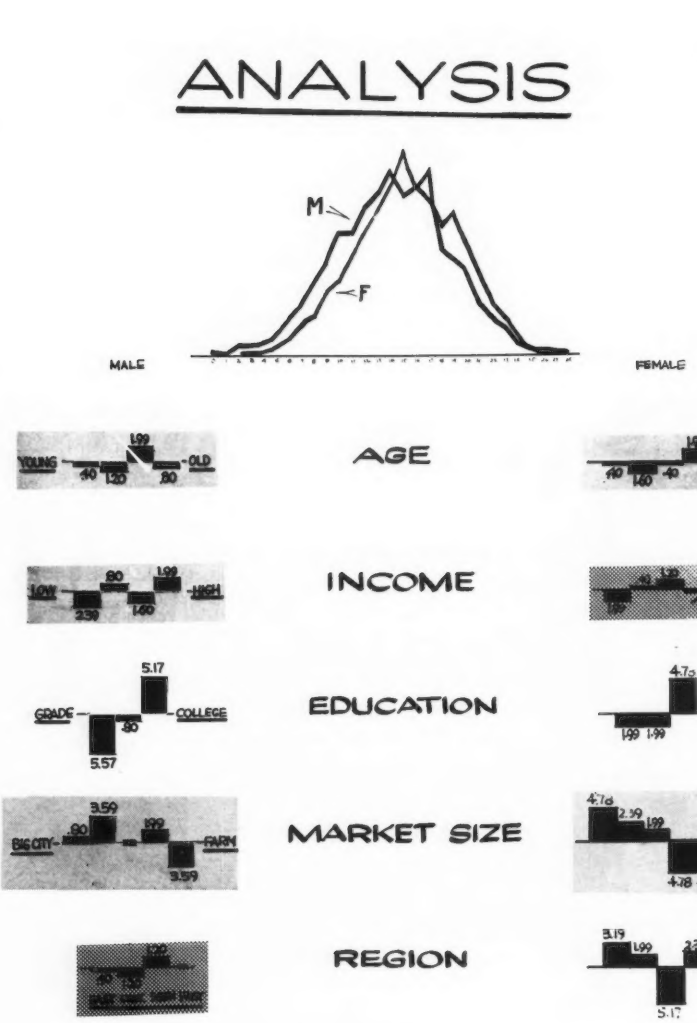
ANALYSIS
M
F
MALE
FEMALE
AGE
YOUNG
OLD
1.99
.40
1.20
.80
1.60
INCOME
LOW
HIGH
.80
1.99
2.39
1.60
EDUCATION
GRADE
COLLEGE
5.17
.80
5.57
4.76
1.99
MARKET SIZE
BIG CITY
FARM
3.59
.80
1.99
2.39
4.78
REGION
3.19
DIFFERENCES BETWEEN GROUPS NOT SIGNIFICANT AT THE .001 LEVEL

Figure 3

age groups, income groups, or city sizes. The need for analysis does differ by education—it's highest among the college educated both among males and females. This, however, doesn't necessarily mean that education causes the increase in the expressed need for analysis; it just indicates that there is a relationship.

The need for *achievement* is based on expressions of wanting to succeed and accomplish something of great significance. Figure 4 shows that men are slightly higher than females on this need for achievement. Among males the need for achievement reaches its peak in the 30-39 age group and then declines. Achievement is also highest in the $7,000 and over income group among men and very high in the college educated. It is high in the big cities, in the East and in the West.

The need for *change* means wanting to do new and different things, wanting to experience variety and novelty. Females are slightly higher than males in their need to experience variety and novelty in their daily routine (see Figure 5). The need for change, however, seems to be most strongly related to age, being highest among the young and lowest among the old. People in the West express a relatively high need for change and the people in the South a low need. The variation of scores on change are greater than we get on other needs by census regions.

The heterosexual need is based on attitudes toward sex. The need as we measured it indicates to a large extent people's willingness to talk about the subject. Men are significantly higher than women in their willingness to talk about sex (see Figure 6). In fact a relatively large percentage of women do not like to talk about the subject at all. The attitudes toward sex differ very markedly by age groups. The younger household heads are more willing to talk about it than the older ones. Similarly the higher income, higher educational groups and big city people are more willing to talk about it. The lowest scores on this heterosexual factor by city size are found in the small towns and also in the South.

These, then, are a few examples of the kinds of results we found when we related the scores to age, income, education, city size and census region. Any segment of the market can be similarly described or further broken down. For example, we can hold age constant and see how the needs vary by income, or education and so on.

In addition to relating needs to the characteristics of the individuals we can also describe the users of a particular product. For example, taking an actual case history, as shown in Figure 7, men who buy product "X" are significantly above the average U.S. male on the following needs: heterosexuality, aggression, achievement and dominance. They are significantly below average on

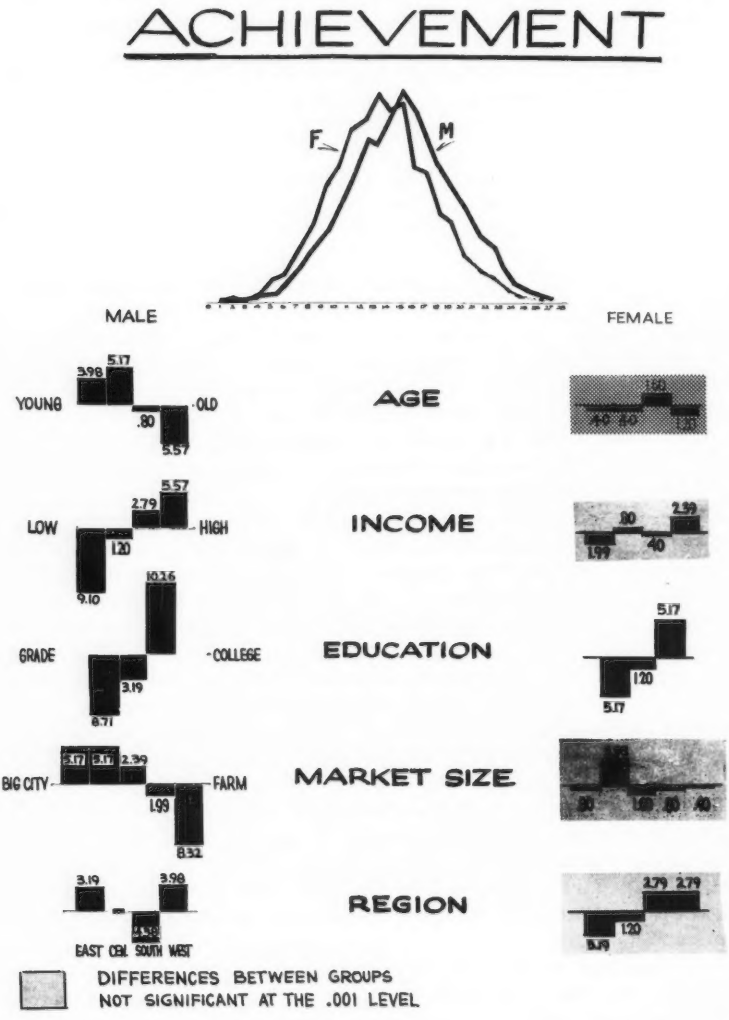
ACHIEVEMENT
F
M
MALE
FEMALE
YOUNG
OLD
AGE
LOW
HIGH
INCOME
GRADE
COLLEGE
EDUCATION
BIG CITY
FARM
MARKET SIZE
EAST
SOUTH
WEST
REGION
DIFFERENCES BETWEEN GROUPS
NOT SIGNIFICANT AT THE .001 LEVEL

Figure 4

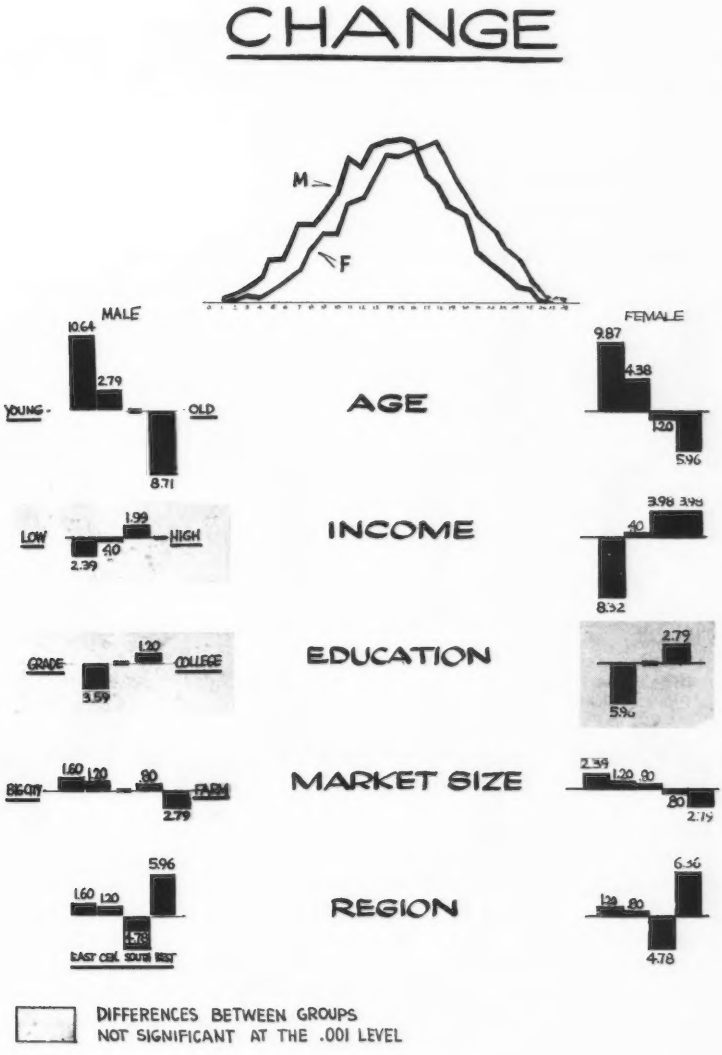
CHANGE
M
F
MALE
FEMALE
10.64
2.79
8.71
YOUNG
OLD
AGE
9.87
4.38
1.20
5.96
LOW
1.99
.40
2.39
HIGH
INCOME
3.98
.40
8.32
GRADE
1.20
3.59
COLLEGE
EDUCATION
2.79
5.96
BIG CITY
1.60
1.20
.80
2.79
FARM
MARKET SIZE
2.39
1.20
.80
.80
2.79
5.96
1.60
1.20
EAST
SOUTH
WEST
REGION
6.36
1.20
.80
4.78
DIFFERENCES BETWEEN GROUPS
NOT SIGNIFICANT AT THE .001 LEVEL

Figure 5

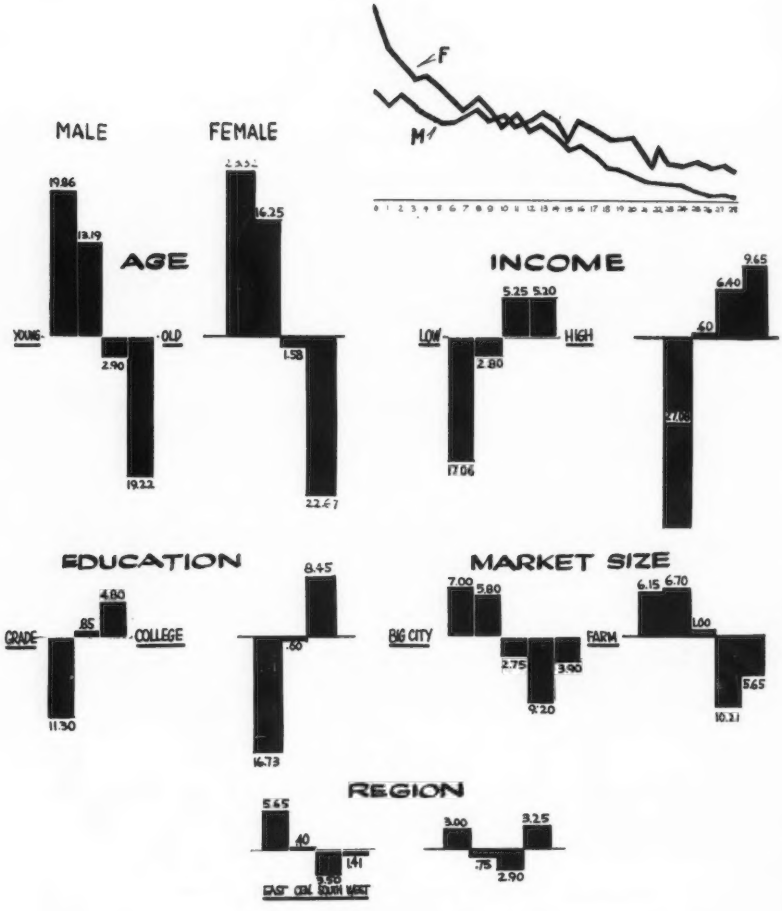
HETEROSEXUALITY
F
M
MALE
FEMALE
AGE
YOUNG
OLD
19.86
13.19
2.90
19.22
16.25
1.58
22.67
INCOME
LOW
HIGH
5.25 5.20
2.80
17.06
9.65
6.40
.60
27.08
EDUCATION
GRADE
COLLEGE
4.80
.85
11.30
8.45
.60
16.73
MARKET SIZE
BIG CITY
FARM
7.00
5.80
2.75
3.90
9.20
6.15 6.70
1.00
5.65
10.21
REGION
5.65
.40
1.41
3.00
3.25
.75
2.90

Figure 6

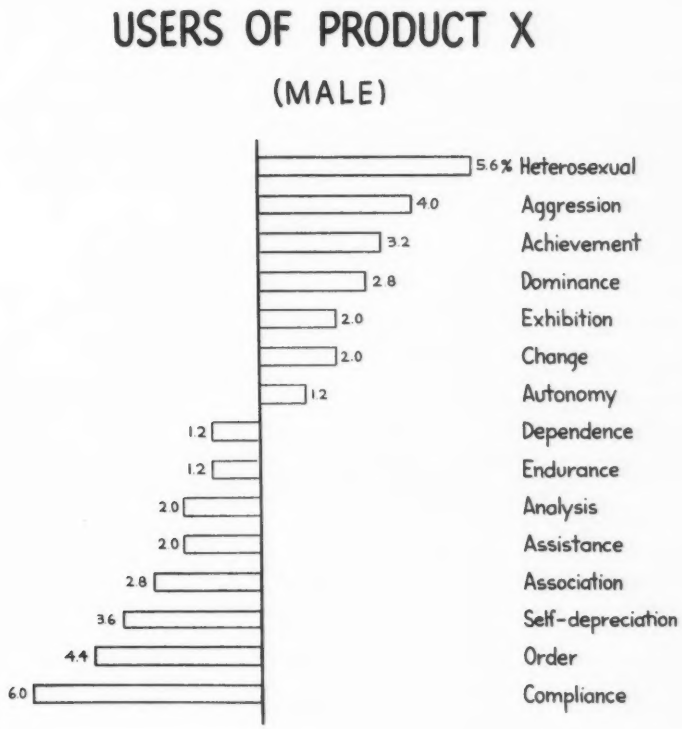

Figure 7

compliance, order, self depreciation and association. The composite picture you get of these men is that they aren't what you would call conservative or timid.

Similarly we can describe both males and females who are heavy users of product "X" and males and females who do not use the product at all. Figure 8 shows that the heavy users of the product are at one extreme in terms of their responses, and the non-users are at the other extreme. The non-users tend more to the conservative, compliant, self depreciating types of responses. Keep in mind that all of these people answered the same 225

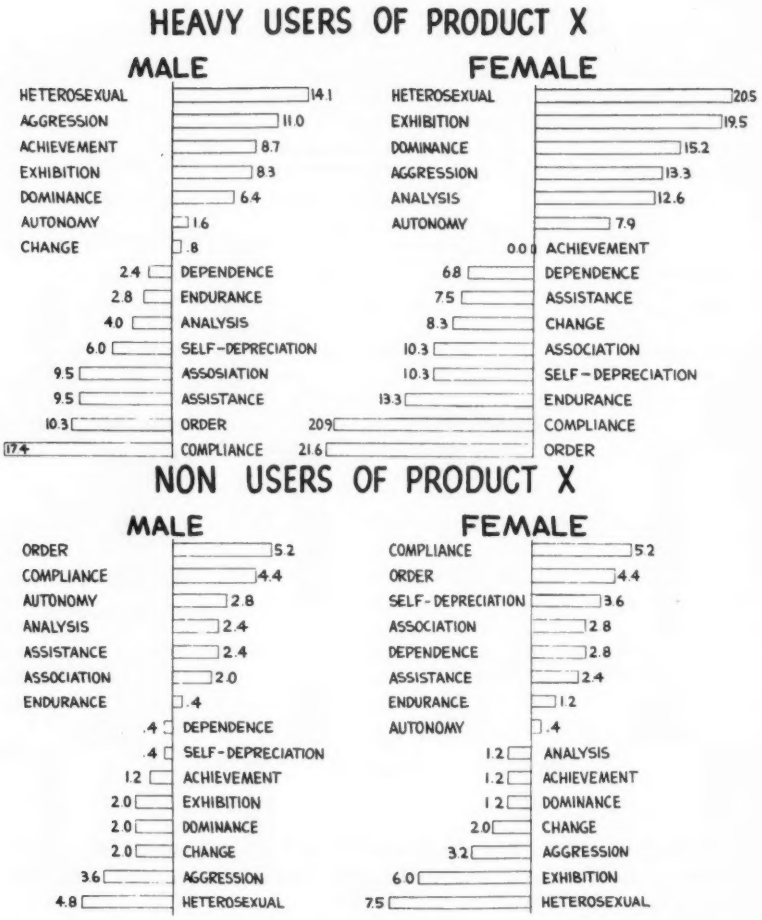

Figure 8

questions representing fifteen needs, and when we break their responses down by usage, we get these differences. In other product catagories we have found different kinds of responses for users

and non-users. The age, income and education differences between heavy users and non-users may be in part responsible for the variations in responses, but even when these factors are held constant, differences emerge. Clearly the heavy users and non-users are different kinds of people—they respond differently to the same questions.

We also find differences in the response of people by the type of the product they use (as shown in Figure 9). For example, both the users of Type A and Type B look somewhat like the total users

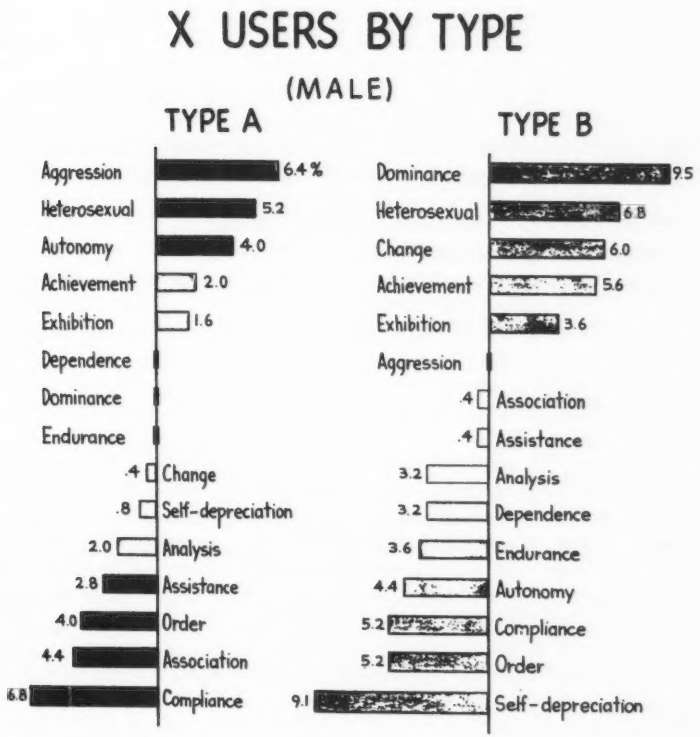

Figure 9

of product "X" on some characteristics. But there are interesting differences—the users of the newer type, Type B, are higher on dominance, achievement, exhibition and *change*. The users of the older type, Type A, are higher on aggression and autonomy (the need for independence, resenting authority).

We have also described brands in this product catagory, and they seem to make sense in terms of the images that have been created for them. However, the potential use of a tool like this lies in aiming for the brand image that will be most compatible with the best potential users of your brand.

Profiles have also been obtained for people exposed to different magazines and television programs. Figure 10 shows that the men who have copies of Magazine A in their homes respond quite differently from the men who have copies of Magazine B in their homes. The men in Magazine A homes are high in their expressions of dominance and are more willing to talk about sex. The men in Magazine B homes, while also high on dominance, tend to express more interest in people and the understanding of people. If we now deal with these catagories as response patterns, *we don't have to worry about the meaning of these need categories.* We can simply say that the responses of men who use product "X" are more like the responses of men exposed to Magazine A than those exposed to Magazine B.

There is a great advantage in dealing with these characteristics purely as responses, for direct relationships can be established and predictions can be made without getting lost in a speculative morass of psychological mumbo-jumbo. The fact that we get measurable differences in response and can relate these differences to product usage and media is valuable no matter what these differences may mean.

Of course, it wouldn't be very wise to base media selection solely on this kind of matching. A more direct thing to do would be to measure the actual usage of the product by magazine readership and also to obtain classifications by age, income, city size and so on. However, as a supplement to these measures, an analysis of this kind can be helpful, particularly where other classification variables do not show much difference and a choice of magazines or of a course of action has to be made. The more we know about the markets and the way the people respond whom we are trying to reach, the better selling job we can do.

There is a lot of work to be done in this area, so that conclusions and recommendations are based on valid principles and not just on the private opinions, random personal thoughts and prejudices of so-called experts. At J. Walter Thompson we are still

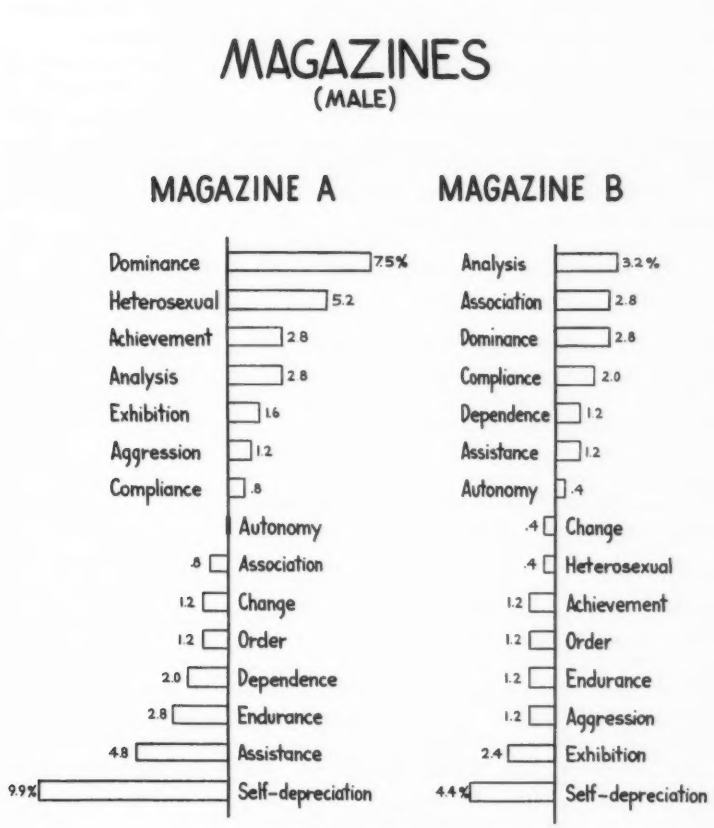

Figure 10

experimenting with this particular technique, attempting to refine it and validate it in terms of sales criteria. We are trying to see whether or not people will respond to sales appeals based on their expressed psychological needs.

Sampling is just as important in this kind of research as it is in any area where one has to project findings based on a segment of the total to the whole population. People respond differently according to their sex, age, income, education, city size of residence

and geographic area. Unless these factors are properly represented when we are describing the users of a brand or the readers of a magazine, our results will not give us a true picture.

Measurement is also very important and necessary in this kind of research because we must evaluate differences in terms of quantities to obtain objective results that will be based on more than just private opinions, random thoughts and speculations. Anything that exists, be it a nose, an upper left bicuspid, an attitude, or a psychological response exists to some degree, and therefore can be measured.

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CREATIVE ADVERTISING PLANNING

LESTER A. DELANO*

North Advertising Incorporated

RATHER than discussing the specifics of research methodology today, I'd like to talk about context—about how the various elements in an advertising plan relate to each other—and how the very nature of these relationships determines whether or not your planning is really "Creative."

There's been a lot in the trade press recently about preparing Advertising and Marketing plans. I think this gathering interest in the techniques of planning is very encouraging. But I think there is an inherent danger in talking about "How to Prepare" and I can sum it up in one word, inflexibility.

Planning is process—it's a continuous need. The "Annual Plan" serves the very valuable function of bringing everything up-to-date, getting it down in one place, and integrating all the elements. But this Annual Plan is just a big pulse on a year-long continuum of planning. The existence of the Plan cannot be allowed to inhibit the continuous creative simmering which is so vital. Planning can't stop when your "Plan" is presented.

THE ELEMENTS OF THE PLAN

Now, let's take a look at the various elements which fit into an Advertising Plan. I'm going to cover them very quickly, and I am not going to discuss how each of these elements is determined.

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Instead, I want to indicate how they relate to each other and how they flow into the final plan. Let's just keep this on a very broad level of analysis and talk about concepts rather than specifics. We'll oversimplify somewhat in the interest of clarity.

Sales Objective

You always have to start somewhere and perhaps the best place is with a look at the market situation past and present. From this, you can set a tentative sales goal and target to aim at.

This, of course, is not a "forecast." A forecast says in effect, "If we do so and so, we'll attain such and such." In other words, a forecast is keyed to a specific course of action. In contrast, our sales goal at this point is just preliminary thinking as to what we think we ought to head for. As we construct our plan, we'll see whether this goal is realistic or not. And when we finally decide on a strategy recommendation, then our goal becomes a forecast—because we'll then be saying "If you follow this plan of attack we feel that you will sell X."

Market Definition

This, I am sure is familiar to all of us. We specify where and when sales are being made—region, city size, season, even such things as water hardness areas, depending upon the products you are dealing with. This is the traditional sales analysis function.

Consumer Definition

Here we're talking about the people who buy our product, both their "statistical" and their "psychological" characteristics such as age, income, economic; motivation, personality, etc.

Product/Brand Image

We're all in touch with this element; the product/brand "personality"—"old" vs. "youthful," "luxury" vs. "necessity," etc. Here, incidentally, is one of the over-simplifications. Obviously, the product/brand image is in part shaped by the interrelationships between products and people. From the research standpoint, the two are not separate, although the "results" can be looked at separately.

Now these three elements—Market Definition, Consumer Definition, Product/Brand Image—give us what we need to know to build our Marketing Profile.

Let me make a side point here. One of the problems you always run into is that you don't have all this information. It is essential, when you don't have certain facts, to make certain critical assumptions about them and get agreement from all parties concerned. Because, all of these factors exist, whether you know what they are or not. And an intelligent guess here and there can do a lot to sharpen up your total perspective.

So we have a Marketing Profile now as it exists—geographic, by types of people and in terms of product image. This is not necessarily your "marketing target." Once you've gotten this composite Profile you should look at your product, your package, your distribution, and all other influencing factors (including previous marketing strategy) to see whether there are reasons why your Profile has to be this way. Let's say, for example, that you're not really doing as well as you should proportionately with people over fifty. Maybe you can do something about this. Perhaps a new creative strategy, or a different type of media pattern will bring these people into the field without penalizing you with the younger ones.

Some of the non-buying sectors of your Profile may actually be areas of opportunity. So what you do is build up your Profile Target, which may be different from what your Profile is now.

Creative Strategy

Based on the Profile Target, we try to evolve a general Creative Strategy which will effectively capture the desired market. We could discuss this for days—how the general approach is developed, how everyone looks for the big unifying idea, etc. I think we're all familiar with and properly respectful of what goes on in this phase.

Media Plan

At this point we are ready to select media which adapt to our creative approach, and reach our market target. The Creative Strategy will have told us in general terms what type of media best adapts to the creative approach. Our Profile Target will tell us the kinds of people we want to reach. It now becomes a question of relating these requirements to the information available from the various media in an attempt to find the optimum pattern.

I don't want to get into a discussion of media research here, since this is a subject in itself. Let's just say that there is good information and bad information, and it's up to the media analyst to pick out that which is usable. Again, let me emphasize that if information *isn't* available, then it's time to make an educated guess. There's a heck of a lot of imprecision in this whole process. We recognize this. But, nevertheless, decisions have to be made, and you try to make them on as intelligent a basis as possible. The old dictum "if you don't have the facts, don't put them in" does not allow for the fact that these influences exist independently of whether or not you have them defined statistically.

So we select our media and we specify how much media is necessary to reach our goal. Again we have a subject in itself: How do you know how much? Generally speaking, whatever method you use is going to depend on historical factors, competitive factors, the nature of the product, the frequency of purchase and a good shot of experienced judgment. You make a decision as to how much advertising weight you are going to need over the year's period to reach your goal—and then you determine how many media "units" are going to be necessary to give you this weight level. Imprecise? Sure! But basing your decision on carefully considered assumptions is a giant step beyond sticking a pin in a set of advertising/sales ratios.

Budget Determination

You will notice that up to now we have very arbitrarily refused to consider money. And it is my opinion that media creativity is less inhibited when money considerations are ignored at the beginning. If the media man deals with advertising weight, which automatically compensates for such things as changing media costs, etc., he's going to do a more creative job—at the expense of a lot of extra work.

So in this step we apply all our media costs to the schedule and determine how much money we're talking about. And once we've gotten this figure, we apply it right back to the original goal to see if it's practical. Maybe it is and maybe it isn't. If it doesn't meet profit requirements, you start all over again with a different goal and revised strategy.

Testing

The expected costs for testing should also be included in the total budget figure. There are always a few bright ideas which

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aren't quite bought as strategy is built up. Some of them may be very good. They should be tested, and we should always be prepared for a quick change in strategy if they prove out.

In addition the Total Plan should be tested. Depending upon the nature of the product, you may or may not have good sales information available. Even when you do, it's sometimes difficult to relate this back to the advertising plan. But there is another way to get an idea of how well things are proceeding.

You have your Profile Target. You have built a Strategy Plan designed to reach this Target. Therefore, you can periodically take a look at the Profile as it exists and see if it is moving towards your Target. Are your user characteristics and is your product image shifting somewhat closer to what you consider to be the ideal?

So we have the elements of a plan and how they fit together as shown in Figure 1. The trouble is, *this is all wrong!* In effect, there is another set of relationships operating among these elements as shown in Figure 2, which are completely different from the ones we have outlined.

We are dealing with process—with a dynamic situation. There is reciprocity among these elements in *all* directions, not just the ones we've outlined. In effect, we have a "field" with a high degree of interaction among all elements within it. Let's take a look at a few of these "reverse" relationships. How can your Creative Strategy affect the Market Definition part of your Target?

Perhaps your creative people come up with new appeal designed to sell your product in the summer where it has always been weak. Obviously, this is going to change the seasonal dimension of your Profile Target. In the same way a different creative strategy could affect the Consumer Definition part of your Target—if, for example, they come up with an appeal which will be effective among the older age group which you haven't been capturing.

How can your Media Plan affect your Creative Strategy? This is a very practical problem. Let's say that the Creative Strategy indicates that print is the ideal medium for the campaign. Maybe all of a sudden you have an opportunity to pick up alternate weeks of a television show from some advertiser who's hurting. And the opportunity is just too good to pass up. This means that your copy people are going to have to go back and work things out for television.

We could certainly cite other examples of cross relationships existing in this schematic, which is beginning to look like a Rube Goldberg device. The main point to recognize is that there are many cross or "counter" relationships existing among these

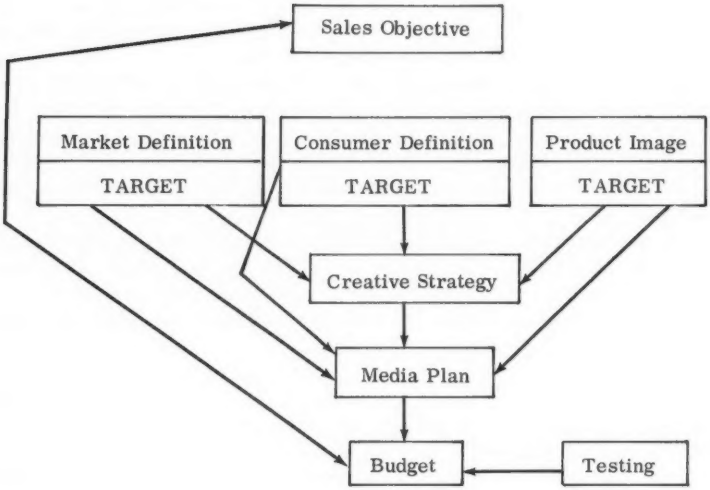

Figure 1

elements which are just as pervasive as the more "logical" relationships we specified the first time around.

What does all this mean? It means this. A plan is not really constructed in steps. The various elements fit together but at many different angles, and at many different points. And here is my major thesis: The prime element in *Creative* Advertising Planning is *feedback*. If the planning procedure becomes over structured, then creativity is hopelessly inhibited. It's as simple as this.

So how do you plan? The answer is coordination. A client or agency generally exhibits a departmental form of organization. There is inherent in this a certain inertia which can stand in the path of this "circulating feedback" type of planning. Depending upon the nature of the organization, one particular entity must be

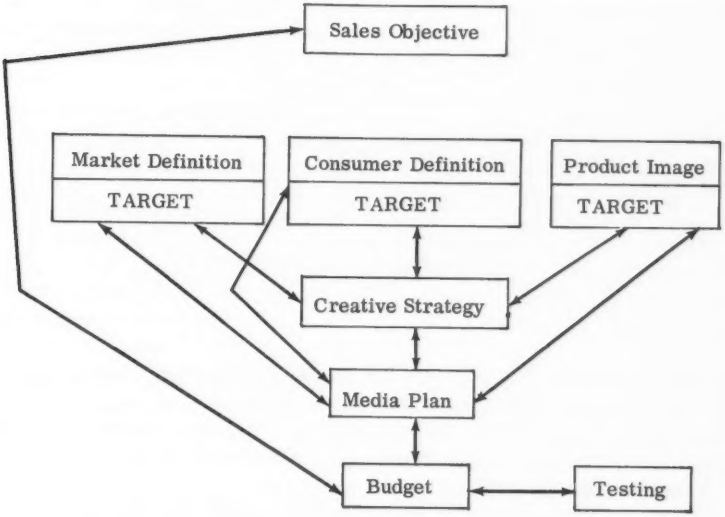

Figure 2

in complete control of the preparation of each Plan. This person, or perhaps this group, must be scrupulously informed at all times on the status of thinking in all departments. Let's be practical. This requires more than simple authority. It requires a good job of selling or persuading. And working with people who are continuously under deadline pressure, trying to get them to shift gears and reverse things at the drop of a hat because new information has come up, requires a high level of cooperation. (I also might mention that it requires mature, imagainative department heads who recognize the true nature of the problem.)

It's tough to plan creatively. It's a lot more expensive to recognize these circulating relationships and operate within the framework. In fact, it may not look as "businesslike." An A, B, C, D, E, or 1, 2, 3, 4, 5, type of structured operation is a lot easier on your nerves and stomach lining. Chances are it makes your Annual Plans Book more organized and readable, because you've had more time and everything is done in a nice, smooth flowing order. But sooner or later the sales figures start showing up the difference between planning just for the sake of planning, and planning *creatively*.

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RESEARCHING THE CREATIVE EFFECTIVENESS OF ADVERTISING

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THE title of my paper implies discussion of specific methodology. This is not what I intend to do, however, I wish instead to put advertising research in the context of a broader theory and talk about some of the hidden assumptions implicit in the use of advertising research methods.[1]

Lester Delano has written incisively about the need to recognize the unspoken assumptions of marketing plans, postulating when necessary. I want to follow up his comments and try to apply them to the area of creative strategy and advertising research. I'll try to outline some of the ideas which intelligent and pondered research, aimed at evaluating the effectiveness of an advertisement, might wisely consider.

The first thing to explore is the relationship which exists between research methodology and concepts of human nature. By "concepts of human nature," I mean the ideas people have about what makes other people tick, think and feel as they do.

In analyzing this relationship, I suggest we examine various assumptions about the nature of man, what he is and what he is not,

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1. The Creative Research Department of Tatham-Laird has taken this problem quite seriously. Much of what follows has been distilled from conversations with departmental members: in particular, Mimi Levin, Claire List, Phil Willmarth and Patricia Watson.

before we discuss research methods for testing whether we are communicating with him. Let me mention some powerful conceptions of human nature which, in turn, raise some serious questions about how we should or should not go about testing the selling-effectiveness of our advertising.

For guidance in thinking about human nature, let's look at some of the influential thinkers and philosophers—some of the people who have literally helped to shape Western Civilization with their broad, bold and imaginative thinking.

Suppose Adam Smith, the great economist of the 18th century, were hired as a copy writer to sell automobiles. The president of of the agency with the automotive account, perhaps, says something like this: "This guy is smart, he's a good writer, so maybe he can sell cars."

How would he do it? Adam Smith's conception of human nature, essentially, is one that says man operates, solves things and decides, largely by pure reason in the interest of his economic advantage, so he might write copy something like this:

> "Do you really need a car? Let's examine the facts! If you reason that there is no other way of your getting about—and you must get about—then, you do need an automobile. If you say to yourself that price is important to you, then choose this automobile because it is the least expensive. If you honestly can say to yourself that appearance is not important, but low mileage and little maintenance is, then it is reasonable for you to choose this car. If you say that comfort and prestige mean nothing to you, then this car will suit you. Yes, if you can say these things, then this is the best automobile for you—no prestige, comfort or appearance extras to clutter up its essential economical qualities."

Well, that's a reasoned and rational approach if there ever was one. It's one which might gain some customers; but until we read the advertisement written by Dr. Sigmund Freud, who makes different assumptions about the nature of man, we won't try to guess at Adam Smith's effectiveness as a copy writer.

Dr. Freud, who believed that man is primarily motivated by his irrational urges, might write copy for the same company along these lines:

> "You can be more powerful and masculine than you are—or than she is! This automobile is built for the man who

> wants the hard feel of sure power and control in his hands. It is not for the man who is interested in appearance, in value, in economy—but for the man who wants a GIANT... a PEGASUS...a RUGGED authomobile."

Let me say, obviously, that what I am trying to do here is to exaggerate enough to bring out some of the different conceptions of human nature that a few of our great thinkers have held; the timeless ways in which what makes people tick has been explained.

Here's my point: All advertising is predicated-wittingly or not—on assumptions about what will motivate people and there are different conceptions of what "key motivators" are.

Our examples so far have used "economic man" and "irrational man" as illustrations of how advertising can make some basic assumptions about man's nature in order to try to persuade him. But—let me give you one more example of a conception of human nature (which influences car advertising) before we draw the relationship of these examples to advertising research.

Veblen, the chronicler of American social values, who believed that Americans wanted to prove they were ahead by "conspicious consumption," might write an automobile ad like this:

> "If you want to be better than anybody on your block—and certainly better than all your friends—then this is the car for you! This is the automobile which will make everybody jealous. This is an automobile which will satisfy you by making everybody look again. If you are interested in performance and economy or power this is not the car for you; but, if you want to make other people envious and jealous—by all means keep ahead. Yes, get ahead, with this automobile!"

You can see by these three selling approaches and their different assumptions about what motivates people, that you can really end up pretty wide of the mark if you let yourself be influenced literally by a single conception of why people act as they do.

We can probably all agree that people are motivated by different values and urges at different times and in relation to different things. Man is at once biological and psychological, rational and irrational, conscious and forgetful, aware and unaware of his values. Despite the exaggeration in this copy written by these three great gentlemen, I think that these are meaningful illustrations of the usually unidentified values which can underlie different advertising approaches.

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What does this mean for advertising research? We have suggested that: Most effective advertising is based upon a shrewd appraisal of human nature. And we have also suggested that: Every piece of copy is written with a basic assumption about what motivates people in reference to a given product. It doesn't seem possible to write an effective ad without making some judgment about what is important to people and what will appeal to them.

Now we suggest this: In order to do intelligent research it is necessary to understand the copy strategy (basic motivators used) to tailor the research methods to be appropriate for the way the advertisement is trying to persuade. This is so because the research methods used to evaluate advertising are in themselves based upon certain assumptions about human nature. Therefore, the way you test advertising depends upon the approach the advertising takes (as, rational, irrational, snob, etc.). Not all advertising can be evaluated in the same way.

Let's take *one example* of the relationship between copy strategy and research methods. It seems to me that it would be particularly hard to test the comparative effectiveness of the three approaches to advertising we've written (Adam Smith's, Freud's, and Veblen's) by recall and recognition methods. It seems to me, for example, that people might be reluctant to tell you that they had an urge for power and mastery which they wanted to take out in an automobile. I think that the same thing holds true for peoples' needs to be envied for material possessions. Indeed, I do not think that many people are even aware that some of these impulses exist in themselves.

These methods assume, first of all, that people can tell you, indeed want to tell you, what they remember. It also assumes that what they remember are the only things or important things in the measurement of advertising effectiveness. It also assumes that what they do not play back is of no importance in measuring the effectiveness of an advertisement.

My point: Simply, that research or creative evaluation which relies on what people remember from an advertisement would probably lead to flavoring the reasonable "economically enlightened" approach of Adam Smith. The arguments that Smith beams at the audience are the kinds of things that probably would come out best in this kind of research because they are logical—and who doesn't want to appear logical? Then too, because they do not offend anybody, they are not buried or ignored because of any threat to one's ego.

It seems to me that what we could be doing by the use of certain techniques on all kinds of ads, rational and emotional, is to

load the dice in favor of advertising that comes out best because of the research methods used. For example: We may occasionally set up our advertising research methods in such a way that emotional or mood or image kinds of advertising really have a limited chance of being considered effective under the criteria.

Let us hasten to say that certainly recall and recognition are not without value. I only point out some of the difficulties in using them. I use recall and recognition only as an example of my major thesis: *Research and advertising make assumptions about human nature which should be examined and recognized for what they are.*

Where does this leave us? I think, in the position of skeptical professionals, we should be able to say to ourselves that one kind of copy testing research cannot answer all the questions involving advertising effectiveness. Which method to use in judging advertising depends upon what approach the advertising takes.

If, for example, we are planning to test creative approaches which play on emotions and images which people hold about products, then perhaps, we had better not use a copy testing approach (like recall and recognition) which implies our advertising is based on pure reason. We are liable to get results which though precise could be very misleading.

What might be the basis for an approach to copy testing, emotional or mood copy? I think it can be stated like this: If we know what kind of a conception of the brand or product we are trying to sell, if we know the kind of an image we are trying to develop, what impression of the product we are trying to engender by our advertising, then we are in a pretty good position to measure whether our advertising approximates this. We would measure by the use of bi-polar scales, open-end questions, projective questions and other techniques basic to communications research.

There is one other point I would like to make in connection with using a tailored approach to evaluate emotional advertising: Let's measure the total effect of the advertisement. Let's look at the consequences of the advertising and not primarily at the advertising itself. We should concern ourselves with what people think of our product—as a result of our advertising—not with what they think of the advertising copy, salespoints and illustrations.

I think that the kind of impression we want to create with our target audience, much like the consumer and product profiles which Mr. Delano has discussed, come from *prior* research. It comes through both marketing research and qualitative research. This kind of agency research is of vital importance in terms of developing an appropriate character for our brand—and—in terms of selecting an audience for our particular approach.

We have already discussed the relationships which can exist between research methods and the assumptions about human nature which advertising must make. I would like to comment briefly on the importance in effective advertising of understanding and analyzing as completely as possible the hidden assumptions inherent in its creative approach.

I think that failure to understand fully the psychological appeals in a creative approach can have this effect: You can dilute the big idea.

You can have advertising which can contradict itself. You can do this by shoveling too many unexamined creative approaches into an advertisement or a campaign. You can do this by throwing your creative "sock" in all directions at once.

You cannot be all things to all men at the same time. The point: Know the attitudes, beliefs and values which surround your product; know the people to whom you are appealing; analyze the psychological assumptions of your creative approach in terms of their cogency, consistency and purity. Reconcile all of these factors in a logical way, and you won't pull your punch.

I guess what I'm for in the whole area of creative analysis is *sense*. Let's see if the research method fits the strategic advertising approach we're trying to evalute. Let's pay particular attention to whether our methods do justice to those conceptions of human values which underlie our creative strategy. Let's use appropriate research techniques both in searching for appeals and in testing their use.

This is a big job. It takes a kind of a mind which is at once creative, analytical and methodical. It takes the kind of mind which understands creative strategy and understands how all kinds of marketing and psychological facts are synthesized to develop that strategy. I think the time is coming in our business when the great gap on the executive level between research men and creative men is going to close. It is being increasingly recognized that creative people and top level research men really do some of the same things. I think this recognition is a good thing.

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THE QUALITATIVE EFFECTIVENESS OF TELEVISION ADVERTISING

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McCann-Erickson, Inc.

I do not think it is a particularly new thought that advertising is basically a communications process, or that advertising can be defined primarily as "the communication of a selling message to the advertiser's most logical prospects." In the past, however, there have been many instances in which advertising practitioners have failed to evaluate advertising as a problem in communications. In general, we have been aware—sometimes almost viscerally—of some of the characteristics of communications and have applied our rather sketchy knowledge to advertising, but seldom has the attempt been made to articulate systematically the elements which make for effective communication in the specific area of advertising.

Here, I would like to discuss four of the basic elements which make for effective communication in advertising.

Obviously, one of the first elements in effective communications is to have something to communicate. In the case of the TV commercial, for example, there must be a definite objective—a "purchase proposition" which has been established as an effective appeal.

Second, the commercial must be created with a specific recipient in mind.

Third, the commercial must be comprehensible to the viewer. This point may sound completely obvious, but it is really remarkable to notice the enormous differences in the comprehensibility

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of various commercials—as you may already know by virtue of your own observations. Nowhere is the magnitude of semantic problems more obvious than in the field of advertising, and particularly television advertising.

Finally, there is the element of measurement—evaluating the effectiveness of the communication.

These, then, are some of the most elemental factors in television advertising. They are qualitative rather than quantitative in nature, not because I want to minimize the quantitative areas of advertising, but rather because the qualitative areas tend to be the least understood and the ones with the greatest potential for fruitful exploration. Let us now discuss these four basic factors in a bit more detail.

THE OBJECTIVE OF THE COMMERCIAL

There is always the danger of regarding advertising objectives in terms of an over-all, single standard. Nothing could be more hazardous. Just as the objective of any general communication may be varied considerably, so the objectives of advertising may cover a broad range of alternatives. The individual campaign may be institutional in nature, with the goal of reinforcing favorable consumer attitudes toward the advertiser or modifying unfavorable attitudes. The objective may be immediate sales, or it may be to alter the brand image of the sponsor's product—and so on.

Objectives are naturally based on the advertiser's immediate and long-range needs. These are determined from several sources. The need may simply be to continue an upward sales curve. The need may reflect distribution or pricing problems—or it may be indicative of prior failures to ascertain the most effective advertising appeals. In this latter case, the employment of motivation research might prove extremely helpful in determining the best purchase proposition to be used. Now, I am not going to get into a discussion or defense of motivation research. I think its proper implementation and utilization has established this set of research techniques as one of the most useful tools available to advertisers. Incidentally, I think one of the most interesting results of "The Hidden Persuaders" has been the formulation of a set of rules to frustrate motivation research. One of the New York papers printed an "Anti-Hidden Persuader" article which cautioned housewives: Before you go shopping, make out a fixed shopping list—and don't deviate from it! Never buy a package displayed at eye level. Never buy a product in a red package, and don't let your husband buy one in a blue package. As a matter of fact, don't let your husband into a supermarket at all!

But, regardless of what the specific problem may be, you must direct your creative efforts against specific objectives.

DEFINE AND LOCATE YOUR "TARGET GROUPS"

Many advertisers frequently fail to consider the exact nature of their market. Couched in communications terms, they may be said to ignore the unique characteristics of the recipients of the communication. It is very tempting, particularly in dealing with so-called "mass consumption" products, to think of the market as one broad mass whose characteristics cut across all demographic and psychological categories.

This type of reasoning, however, can be extremely deceptive; for even in connection with what are usually termed "mass consumption" items, the market is not uniformly profitable. For example, in the toothpaste field, it is a rather surprising fact that as small a proportion as 40 per cent of the U. S. population accounts for about 85 per cent of the toothpaste consumed. How the other 60 per cent of the population manage to get their teeth clean has not, to my knowledge, been made public.

In the cleanser field, another so-called mass consumption product, 25 per cent of the country's housewives account for 75 per cent of all the cleanser used. This means, in essence, that there is a small group of what we might call "heavy scrubbers" who comprise the most logical and profitable prospects for any cleanser manufacturer. There are then, in almost every product field, a hard core of "heavy buyers" or "heavy users" who prima facie should be the primary target for the advertiser. And the characteristics which make the target group especially desirable are important in determining the appeals to be used in advertising.

The characteristics may be psychological, socio-economic, or much more routinely demographic. For example, some people purchase more heavy woolen overcoats than others, because they live in a climate where the average mean temperature is too low to do anything else. Some families use more cleanser than others, because they have more children living at home, and somehow it takes more scrubbing to keep the house clean under those conditions.

In many cases, however, the explanations are not nearly so simple. Why, for example is one person a "heavy smoker," while another is a comparatively "light" smoker? And why don't almost six out of ten adults smoke at all? I don't think the answer can be attributed to cancer—at least not completely.

Not only do smokers differ from non-smokers—there is also

reason to believe that almost every individual brand of cigarettes finds special attraction in the eyes of specific consumer types—personality types. The Marlboro campaign was an obvious attempt to broaden the range of personality types to whom this brand of cigarettes primarily appeals, to masculinize the brand image. The men depicted in the Marlboro ads appear to have been selected to convey the atmosphere of virility and masculinity, although it might very well be argued that their appeal is strongest among men who are the very opposite of the really masculine type.

In any event, however, if we are treating our advertising as a directed communication, we must take into account not just cigarette smokers, but also the specific types of individuals who constitute the most logical market for our brand of cigarettes—as well as for the brand of cigarettes from which we would hope to acquire additional share-of-market.

The characteristics of each of these groups must be determined, since each frequently requires special treatment in terms of advertising appeals.

Once the appeal has been determined and the commercial—or communication—created, its first task is obviously to evoke a favorable response. And this is not easy! It is said that the average viewer is exposed to over 200 commercials a week. Almost by necessity he has developed a kind of mental curtain which filters out most of these intrusions, and it is extremely difficult to penetrate the viewer's consciousness.

So, the first job which confronts the TV advertiser is to break through the curtain and elicit some kind of active and salient response from the viewer. Our experience has shown that there are several ways in which this can be done:

Pose a problem which is meaningful to the viewer and offer a solution to that problem. Put another way, promise to satisfy viewers' real needs and wants. In responding to a commercial, the viewer always wants to know what you can do for him. Sometimes he even asks, "What have you ever done for me?" But usually the question is formulated as, "What have you done for me lately?"

Make the situations and persons in the commercial as projectable as possible. This means simply that the commercial situation and characters should not lie so far outside the viewer's range of experience and knowledge that what takes place on his TV screen is completely meaningless to him.

This does not mean that we must show only commonplace persons and situations, but rather that the situation—at whatever

level—should give the feeling of "naturalness" and lie within the realm of believability.

Wherever possible, try to evoke the salient type of response by showing the product in normal use.

Use the commercial to reinforce the favorable aspects of the advertised product's brand image, or the corporate image of the advertiser. Needless to say, some attempt should be made to effect changes in consumer attitudes, if these are, to any significant extent, unfavorable to the advertiser.

Try to achieve active audience participation in the commercial. Just as in any learning or communications process, a lesson is learned more quickly and more thoroughly if the learner (if we may accurately call the viewer by this name) participates actively in the learning, rather than giving mere passive attendance. Active participation will frequently result if the principle of closure is used. For example, the use of missing letters in a video message—or of semi-hidden visual elements—can be very effective by requiring the viewer to substitute mentally the missing elements. Make the viewer do some of the work.

Try to use human interest situations. Probably the first law of salesmanship is to select an object of interest to the buyer and then to tie in the sales message with that object.

These, then, are some of the ways to stimulate salient responses among target groups. Now let us take up the third basic factor which makes for effective communication in advertising.

COMPREHENSION

The whole study of semantics has brought into sharp focus the importance of words and their meanings—and the tremendous range of variations in those meanings as they are interpreted by various individuals. In advertising, we find in many cases that the advertiser, or his agency, has not accurately assessed the meanings that his commercials will have to the majority of viewers. The meaning the advertiser has attempted to put into the message is not necessarily what the viewers are getting out of that message. Somewhere along the line, there has been a breakdown in communications.

Or, at very worst, communication may never have been established in the first place—because nothing was put into the communication to insure that the viewer would keep his attention riveted on his TV screen after the entertainment was temporarily stopped. It is, of course, not necessary to establish contact with

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every viewer. It is sufficient to secure the attention of a significant proportion of the target group; if that is done, no one is going to complain about the others. This is one of the reasons that the gross scores used as ratings of TV commercials by some researchers are not terribly valuable—unless it can be demonstrated that the target group reacts in precisely the same way as the non-target group. Once initial contact with the viewer has been established, the next task is to insure that the viewer is getting out of the commercial what the advertiser desired to communicate. In general, it would not be difficult to secure the attention of the audience with almost 100 per cent certainty. If you were to show an ostrich luxuriating in a bubble bath having its back scrubbed by Anita Ekberg, there is scarcely a viewer who would not be devoting considerable attention to the scene. And they would remember this commercial.

Yet, I hardly think that this is the way one would choose to sell automobiles, for example. It is therefore of limited value to know, in gross terms, how many people remembered having seen a commercial and what it is they remembered. Much more important is the question: "What effect has the commercial had on the viewer?" and what response has it awakened in him. Response is obviously a more meaningful criterion than recall.

This question of criteria brings up the final basic factor in TV communications which I would like to discuss this morning. Up to now we have talked about the objectives and content of the commercial; locating and defining the target group; and achieving maximum comprehension of the message. At this point, I think a brief discussion is in order on:

EVALUATING THE EFFECTIVENESS OF THE COMMERCIAL COMMUNICATION

I must make clear at the outset that there is no one standard set of techniques for measuring the effectiveness of every TV commercial. Each commercial must be evaluated in terms of its primary objective. If that objective was to change consumer attitudes, then it must be evaluated in those terms. If the objective was to stimulate immediate sales, then the communication must be looked at from that point of view.

It is of course always t e m p t i n g to say that there is a kind of lowest c o m m o n denominator in evaluating advertising, namely sales. The temptation is to judge a commercial on the basis of how well it has done in stimulating immediate sales.

The shortcomings of this kind of approach are fairly obvious. For one thing, it fails to take into consideration competitive advertising activity which is always attempting to neutralize the advertiser's impact. It also ignores what is going on in the marketplace. Nothing, for example, rivals the effectiveness of giving away or almost giving away merchandise, and it is extremely difficult to assess the value of advertising which has to contend with that kind of pricing situation.

It is equally impossible to ignore the effect of distribution problems on the success of advertising. Stated perhaps more simply, many, many times sales do *not* correlate directly with advertising effectiveness. It is easy to say glibly that one can use sales as a criterion of advertising success whenever all other variables are held constant or when all other things are equal. Our big problem is that things seldom are equal.

Because it is almost impossible—except in some kinds of retail or mail order advertising—to evaluate commercials in terms of sales, several peripheral criteria traditionally have been used. In the field of television, for example, such standards as sponsor identification have been utilized—or the ability of viewers to play back part of a commercial message. In some cases, mere liking or disliking have been employed as criteria.

Obviously, these measures attempt to evaluate the commercials at various points preceding actual purchase, before other variables such as pricing and distribution have the opportunity to influence the viewer directly.

Finding valid criteria is a complex problem—as are almost all our problems in communications. Actually, the effect of a communication takes place on many levels. Thus, any attempt to evaluate the effectiveness of a communication must be made at these various levels. Here are some of the questions which would require answering if one were measuring the effectiveness of a commercial:

Does the commercial establish communication through the use of effective interest stimulators?

Is the target group reached effectively by the communication?

Does the communication convey the specific message which the advertiser hoped to communicate?

Does the commercial evoke a *salient* response, that is, a response which is relevant to pre-disposing the viewer to purchase the product?

Is there a feeling of favorable attitude created for the advertiser which, over the long run, may culminate in sales—even if there is no immediate movement in terms of brand switching?

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And, of course, there are other questions which must be asked, depending on what the intent of the commercial was.

Ideally, of course, we would like to create a communications instrument as effective as the one an animal breeder discussed with a friend. "I've just succeeded in crossing a parrot with a lion," he said. "I don't know what kind of a beast it is, but when it talks, I listen!"

37

VOLUME PLANNING IN THE AUTOMOBILE INDUSTRY

JOHN H. SLOAN*

Chrysler Corporation

VOLUME planning is a term which is used almost exclusively in the automobile industry.[1] Its origin dates back more than thirty years when Donaldson Brown first revealed that General Motors based their financial planning and pricing policy on a projection known as "standard volume."[2] Since that time other terms such as index volume and facility planning volume have been added to the automotive planning vocabulary. Just why the word "volume" was selected instead of "projection" or "forecast" will probably never be known but its broad meaning, which applies equally well to sales or production, undoubtedly had something to do with the choice.

To keep the definition simple, volume planning might be described as that function which is charged with the responsibility of developing planning volumes. For those who are inclined

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1. I should like to preface my remarks on the subject of volume planning with this qualification concerning the material being presented. Although I am indebted to my colleagues in the Chrysler Corporation for their assistance, the views expressed in this paper are entirely my own and do not necessarily represent the practices or policies of the company in which I am employed. So far as possible the information which will be presented is a composite of volume planning in all automobile companies.

2. *Management and Administration,* February, March and April, 1924.

toward Webster, a more formal definition might read this way: Volume planning is the adaptation of sales forecasts to the many particular and specialized planning requirements of a complex business such as the automobile industry.

The establishment of a link between volume planning and forecasting introduces a subject familiar to all of us and raises this question—Does forecasting, as carried on in the automobile industry, differ from this function in other industries?

In terms of the analytical tools employed, forecasting is basically the same in the automobile industry as in any other business. There are several problems, however, which tend to make this function as applied to automobiles much more complex, if not more difficult, and justify the broader designation of volume planning.

The first problem encountered by the forecaster is that sales fluctuate widely from year to year. As many of us know from recent experience, volume planning in this industry has been especially challenging for the last three years. It may be that someone did anticipate the 30 per cent increase in car sales from 1954 to 1955 as shown in Figure 1, but I've yet to find that individual. Although some downward movement was expected from 1955 to 1956 the actual extent of the decline was a surprise to most of us. About the only consolation we can gain from these wide swings in the market is that there is never a dull moment. In fairness to my colleagues in automotive planning I hasten to add that most of them did predict during the last few years the direction of the change if not the magnitude.

The unusually long lead time required to design and engineer a new model presents another problem. For example, most 1958 models have already been "put to bed" and work is well along on the 1959 and 1960 models as suggested by Figure 2. Preliminary work has also been started on the 1961 and 1962 models. The product planners are working so far into the future that the new models are "old hat" to them when introduced to the public. Like most other planning, the development of new models requires volume estimates to determine feasibility from a cost standpoint. This applies to the models farthest ahead as well as those planned for the next model year.

Another problem is the increasing emphasis being placed upon styling as a means of achieving product differentiation. While it is true that new model cycles existed before World War II, the changes were much less radical than at present. How times have changed. The public today has come to expect frequent major style changes.

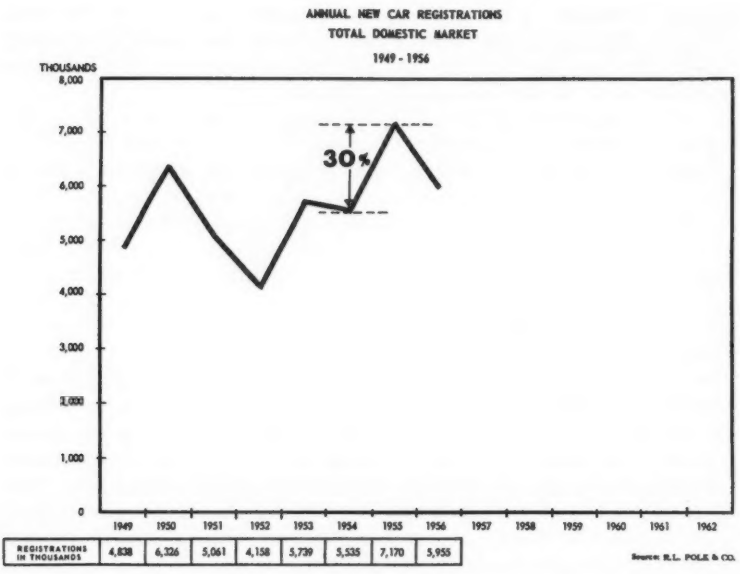

Figure 1

Not only does this emphasis on styling tend to introduce the complication of "styling cycles" in forecasting the total market, it makes the volume planning job for an individual car line downright hazardous. According to R. L. Polk and Company registration data, one particular car line has suffered a 33 per cent loss in its market penetration during the last 14 months, due apparently to a styling change which has not gained consumer acceptance.

The pressure resulting from mounting costs of new model development cannot lightly be dismissed. The attempt to satisfy consumer appetites for new models through styling innovations has resulted in a sharp upturn in engineering and tooling expenses. It is a matter of record, for example, that the Chrysler Corporation spent over $300 million in developing the present line of cars. This amount compares with the $200 million spent on the 1953 models.

DESIGN & ENGINEERING LEADTIME
(Approximate Industry Averages)

	AFTER CLAY MODEL APPROVAL	TOTAL
COMPLETE NEW BODY	22 Months	36 Months
MAJOR FACE LIFT	18 Months	32 Months
MINOR FACE LIFT	16 Months	28 Months
NEW ENGINE	36 Months	60 Months

Figure 2

Because developmental costs have become so burdensome, volume planners are being asked to provide more accurate forecasts of the potential market for new equipment and body styles. Unfortunately, this is the area of volume planning in which factual information is most difficult to obtain.

Another important problem is the increasing number of options and accessories being offered with the base car. By actual count there are 70 different types of optional equipment being offered currently on one of our car lines, not including the 141 paints and 33 trims available to the buyer. If you remember the section of your algebra course dealing with permutations and combinations you could verify, of course, that millions of these cars could be produced with no two alike. It is not surprising the industry is now in the anomalous situation of building cars on a mass production basis for a custom order market.

It is hardly necessary to point out that the complications of near-term volume planning resulting from this development of new optional equipment are becoming almost insurmountable. For example, we now have to cross-classify air conditioning units by engine size so that our Engine and Foundry Division can complete its tooling.

The purchasing procedure whereby commitments for parts must be made to suppliers months in advance of production also presents a problem. Our company is now in the process of putting together the information needed to establish the monthly

Official Vehicle Production Program which will be reviewed, approved and published at the end of the month.

This program will restate our production requirements for July, will authorize fabrication of parts for August and September, raw material commitments for October, plus restricted authorizations for steel, greige goods and other special materials in the month of November.

R. L. Polk and Company have a reporting timetable which calls for the publication of monthly registration data about thirty days after the end of the month. Assume for the moment that an automobile company introduces a new model on December 1st. It would be the end of January before sales results against competitive makes would become available. By that time, the company would be committed for some types of material through the month of June, or seven months of the model year.

Finally, there is the problem which concerns the storing of automobiles. Unlike other consumer goods, cars cannot be easily stored. Except under the most adverse market conditions, factory stocks of finished cars are avoided like the "plague" and dealers very quickly reach their credit limits when field stocks exceed a 45-day supply.

These limitations on storage and the necessity for extended material commitments make near-term volume planning, better known as production programming, an occupation to be engaged in only by the stouthearted.

Against this background of problems which are endemic to the automobile industry it can readily be understood why a single sales forecast or volume projection cannot fulfill all planning requirements. It has often been said that, given the necessary time, an adequate defense can be devised against any offensive weapon. So in this industry a complete planning volume structure has gradually been devised to meet the many forecasting problems just described.

There are several ways in which planning volumes might be classified, but as a starting point let's take a look at these analytical "tools" in terms of time periods. In their longest-range implications planning volumes form the basis for decisions such as the addition of a new car line, the replacement or expansion of major facilities, organizational re-alignments and distribution changes. The long-range forecasts upon which decisions of this nature are based are usually made for periods of ten or more years and are stated, of course, in the broadest possible terms consistent with planning requirements. The distinguishing feature of long-range planning volumes is that they provide guidance for the future even though they do not apply to a specific year.

Another type of long-range planning volume which is very useful in this business is the one designed to cover the next forward body cycle. Some car manufacturers, for example, are now in the first year of a two-year body cycle and are planning completely new bodies and styling for the 1959-60 period as well as the years, 1961-62. It is essential that volumes be established for each cycle so that planning may proceed on a common base. The information is used to plan facilities and to "tool" plants for the full cycle, therefore, the volume need represent only average expectations for the cycle, not for the individual years.

Moving back from the future to the present, a third type of planning volume is needed which will be designated "short-range." In this category is the Index Volume which is designed to fit a particular year and differs from long-range volumes in that it is more specific and is established in greater detail. Model year volumes form the basis for daily straight-time operating rates, tooling peculiar to the particular model, acceleration schedules, pricing, and other activities necessary to launch a new model. At Chrysler we are now in the process of indexing our volumes for the 1959 model year.

A fourth and final type of planning volume is the near-term forecast which is used to plan current operations. This volume forms the basis for monthly production schedules, material commitments, stock levels and other factors affecting day-to-day operations. This is the type of planning volume in which the greatest possible degree of accuracy is required. On the reliability of this type of projection rests decisions which are measured in millions of dollars. For example, even though the annual sales of a car line may pass the million mark, the removal of only one or two thousand cars from production schedules near the end of the model run, due to poor forecasting, may result in obsolescence losses of as much as a million dollars.

Before examining the general methods by which the planning volume structure is established, first a word about the end uses of these analytical "tools." In designing a "tool," it is always helpful to know how and by whom it will be used. There are three general areas of the automotive business which require planning volumes tailored to fit their own special planning needs: (1) Manufacturing, (2) finance, and (3) sales. Other areas, such as engineering, purchasing and industrial relations have need for this type of information from time to time but their requirements can be filled by one of the above three.

The planning volumes needed by manufacturing can best be characterized by the adjective—realistic. The two steps of tooling

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for production and commiting for materials probably involve the greatest monetary risk of all the activities required to manufacture and sell an automobile. As mentioned previously, there are millions of dollars "riding" on decisions that are made in performing these two functions.

By emphasizing the necessity for realism in planning manufacturing operations, there is no intention of implying that other areas of a business can be operated unrealistically. For certain functions a deliberate departure from a "middle-of-the-road" approach may be essential for successful operations. This applies in general to financial planning.

Because the historical record of automobile sales has been so erratic, financial planning must be conducted on the conservative side to protect the assets of the business. The Finance Department may accept a production program as entirely realistic for manufacturing purposes but may deliberately discount the results when making financial projections. "Conservative" is thus a much better description of financial planning than the term "realistic."

Neither of these terms can be used, however, to describe the type of planning carried on in the sales end of the business. Salesmen by the nature of their jobs must be enthusiastic and must do their planning in such an atmosphere. This point will be elaborated later but it will suffice now to say that planning volumes required in the sales area are best described as optimistic.

By way of summary Figure 3 shows a classification of automotive planning volumes according to the period of time covered and the area of business in which they are used. Some variations in terminology are found among companies but the terms shown here are representative of the industry. The use of the same term to cover planning volumes in more than one period does not necessarily imply an identity of numbers. In the case of standard volume the total may remain the same but the body mix may differ from period to period. In presenting these volumes by name only there is a tendency toward over-simplification. Some idea of the vast amount of detail can be gained by pointing out that each volume must be broken down by series and body style and in many instances by plant. For certain purposes the index volumes are estimated by month. In addition to this detail, daily operating rates, optional equipment installation rates, tooling rates, and other significant factors must be computed, reviewed, approved and published.

If I were to stop at this point, I am sure that most of you would leave this room more confused about volume planning in the automobile industry than when you entered. On the one hand I have

AUTOMOTIVE PLANNING VOLUME STRUCTURE

	SHORT-RANGE		LONG-RANGE	
	CURRENT MODEL YEAR	FORWARD MODEL YEAR	FORWARD BODY CYCLE	FORWARD DECADE
Manufacturing	PRODUCTION PROGRAMMING VOLUME	INDEX VOLUME	FACILITY PLANNING VOLUME	FACILITY PLANNING VOLUME
Finance	STANDARD VOLUME	STANDARD VOLUME	STANDARD VOLUME	STANDARD VOLUME
Sales	SALES OBJECTIVE	SALES OBJECTIVE	SALES PLANNING VOLUME	SALES PLANNING VOLUME

Figure 3

told you that it is different than in most other industries because of the peculiar types of problems encountered, not the least of which is the difficulty of making forecasts against an historical pattern of widely fluctuating sales. On the other hand, attention has been directed toward the necessity of providing a wide variety of planning volumes not only with respect to time periods but also end uses. The question naturally arises: How could any usable planning volume structure be established under such circumstances? If you will bear with me I'll try to answer that question.

The first step is to project the trend of new car sales through the period under study. To illustrate the method a trend line is shown in Figure 4. It is not the purpose of this paper to discuss the technical methods that may be employed in projecting the trend of new car sales. That would require at least another hour. It is my personal belief, however, that projections of this type can be made with an acceptable degree of accuracy. In support of this position I would refer you to the extensive literature on the subject of estimating the two segments of new car sales: The incremental growth in car population, and scrappage or replacement sales. Remember, please, that we are referring here to the *trend* in new car sales, not specific forecasts of sales in a given year.

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It may sound a bit like "double talk" to follow so quickly with the statement that there is no known method for forecasting new car sales in a given year—say five to ten years ahead with any reasonable degree of accuracy. In this statement we are referring to a specific sales forecast, not the trend of new car sales.

This means in effect that we have a very good idea of what the average market may be in, say, 1961 or 1962, but we don't know for sure whether actual sales will fall above or below the average. Based on the behavior of new car sales in the last eight years, actual sales could exceed the average by as much as 20 per cent. Below average sales in 1952 were the result of restrictions imposed during the Korean War, therefore, Figure 4 does not accurately portray how far below the average sales might be expected to go. In fact, the relatively full employment and "boom" conditions we have enjoyed since the Korean War would seem to indicate that we have been at or above the average for the last four years. Assuming for the moment that conditions could develop during the next five years which would pull up 15 per cent

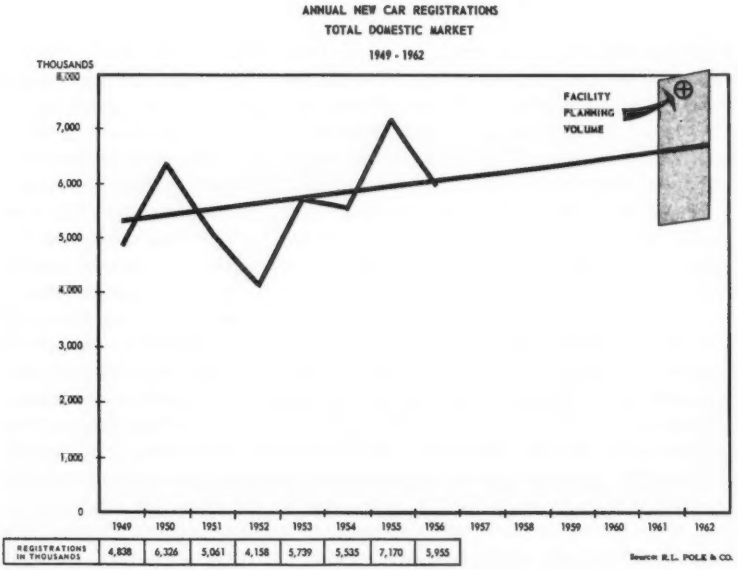

Figure 4

or 20 per cent below the average, the possible range of sales in 1962 could be as large as the shaded area shown in Figure 4.

If the volume is being established for the planning of facilities in 1962, a policy decision would first have to be made concerning the range above average that would be covered. Not only would the company have to decide how much of the peak year to provide for but additional allowance would have to be made for the maximum market penetration expected. Risk is involved at this point if there is any intention of cashing-in on the peak markets. As pointed out in a recent *Business Week* article, the stakes are high (see Figure 5).

PEAK YEAR SALES & PROFIT INCREASES
1955 OVER 1954

	UNIT SALES	DOLLAR SALES	PROFITS
•CHRYSLER·····	+79%	+67%	+440%
•FORD·····	+31%	+38%	+92%
•GENERAL MTRS.··	+32%	+27%	+48%

SOURCE: Business Week Magazine

Figure 5

In the peak year of 1955, the Chrysler Corporation was able to increase production and profits by having the plant capacity to take advantage of the high volume sales in that year. Ford and General Motors also improved their profit position by participating in peak industry sales. However, each company had provided the reserve capacity far in advance of 1955.

This same concept of a peak market is used not only to establish a facility planning volume but also to arrive at a financial planning volume. Although based on the same projection the two are not the same.

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Standard volume for financial planning was originally established, according to Donaldson Brown, in this manner. To the average expectancy for, say, 1962 would be added the percentage, say, 25 per cent to allow for the occurrence of a peak in that year. The facilities or "practical capacity" would then be planned to handle the peak. But standard volume would be set at only 80 per cent of the peak. It doesn't take a mathematician to figure that if one adds 25 per cent to the average and then takes 80 per cent of that peak, as illustrated in Figure 6, you are right back at the average. Donaldson Brown was thus saying that standard volume was really the average expectancy in a future period.

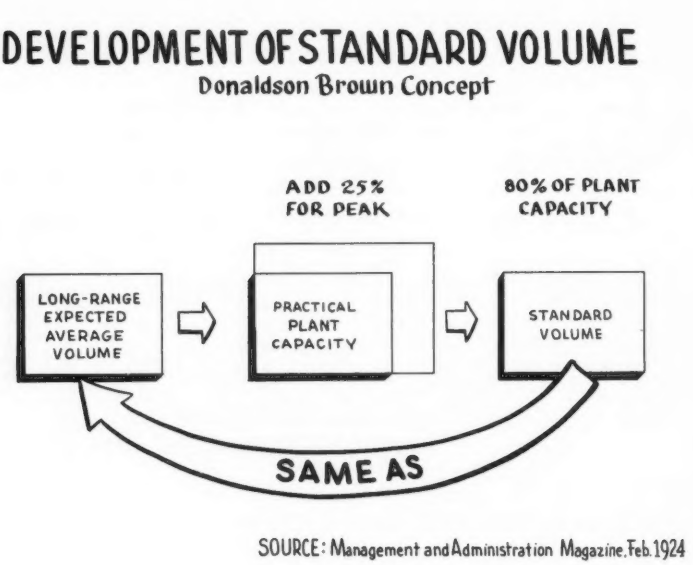

Figure 6

The standard volume concept has been altered since that time. Most companies now select a figure for financial planning below the average expectancy to be on the safe side. This conservative attitude is reasonable in view of past fluctuations in sales but should not be attributed to poor forecasting as has been implied by some persons.

With your indulgence I would like to digress a bit at this point and attempt to clear up some of the misunderstanding on the part of financial planners and others about this occupation of forecasting in which many of us are engaged. While much of the talk about "crystal balls" is carried on in a spirit of good-natured "ribbing," there are some who actually seem to believe that persons in this profession should be endowed with clairvoyant powers. Not knowing what a "forecast" or "projection" really represents, there is a tendency to over-praise or over-condemn, depending upon the spread between the "forecast" and the "actual." It is about time that we, as forecasters, disillusion the public.

A forecast is nothing more or less than a future projection of current or historical relationships based on a set of assumptions. The forecast is no better than the assumptions. If we spent more time in stating the assumptions, there would be less criticism when the forecast missed the actual due to incorrect assumptions.

Pardon the personal reference but I believe it illustrates this point perfectly. During World War II, I made a forecast for a former employer which covered each year up to the second year after victory. About five years after the forecast had been made, the president of the company summoned my boss and me to an Operations Council meeting at which the forecasts were reviewed. Although our over-all forecasts were within 8 per cent of the actual, the president was very critical of the fact that one year was 20 per cent off the target. It so happened that this particular forecast covered the year 1945. In making the forecast we had assumed that the war would end on December 31, 1944. We claimed no "pipe-line" to Berlin or Tokyo but some sort of assumption had to be made. We should not have been criticized for making an incorrect assumption which not even the war leaders could have improved upon at that time.

Getting back to the problem of long-range planning volumes, a considerable amount of misunderstanding could be avoided if these two points were stressed: first, that the volumes are not specific forecasts but average expectancies and, second, that they are based on a set of assumptions which should be reviewed at regular intervals.

Before leaving the subject of long-range planning volumes, I would like to illustrate the method by which the industry projection is converted to a daily facility planning volume. As shown in Figure 7, the average industry expectancy is adjusted for the possible peak year. To this peak is applied the maximum penetration of the industry planned by the Sales Department. This peak company cyclical volume is then divided by the number of available

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SAMPLE DEVELOPMENT OF FACILITY PLANNING DAILY RATE

	INDUSTRY	MARKET PENETRATION	COMPANY 'A'
• Average Expectancy - Forward Cycle	6,500,000		
• Allowance for Cyclical Peak	+20%		
• Cyclical Peak - Forward Cycle	7,800,000	40%	3,120,000
• Available Working Days			220
• Average Daily Requirements			14,180
• Allowance for Seasonal Peak			+10%
• Peak Daily Requirements			15,600
• Overtime to Meet Seasonal Peak			20%
• Facility Planning Straight-Time Daily Rate			13,000

Figure 7

working days to arrive at daily average requirements. Adjustments then are made for (1) the percentage increase for the seasonal peak, (2) the percentage of overtime that will be devoted to the cyclical peak, and (3) the percentage of overtime that will be devoted to the seasonal peak. The resulting figure represents the daily straight-time rate at which the plant or plants should be operated and forms the basis for planning facilities and tooling.

Moving now to the method of establishing short-range planning volumes, there is one similarity to the method just described for long-range volumes. Both types of volumes begin with a projection of the average expectancy for the industry. In the case of short-range volumes, however, an attempt is made to forecast the year specifically above or below the average based upon general economic conditions, new model stimulus, consumer credit, etc. When a realistic market penetration is applied to the industry estimate, the resulting company forecast is known as index volume.

For financial planning purposes in the index year the percentage mix of body styles represented in the index volume may be applied to the standard volume for this particular body cycle to bring it up-to-date, but otherwise no change is made in standard volume.

A sales objective for the index year is obtained by applying a more optimistic market penetration to the short-range industry volume. As shown in Figure 8 the maximum range (shaded area) for long-range planning has been abandoned for a more specific annual forecast. Again it should be emphasized that index volume forecasts are no better than the set of assumptions upon which they are based.

One short-range planning volume which is usually completely overlooked in the planning volume structure is the industry forecast on which production programming is based. In the preliminary planning for the next model year the production programming volume is identical to index volume.

As the production program moves into the model year, however, it is possible that, based on seasonal patterns, the industry may be actually travelling at a rate above or below the index volume (see Figure 9). It then becomes necessary to adjust production schedules to the actual rate of travel and, when the variation is too great, the index volume must be completely

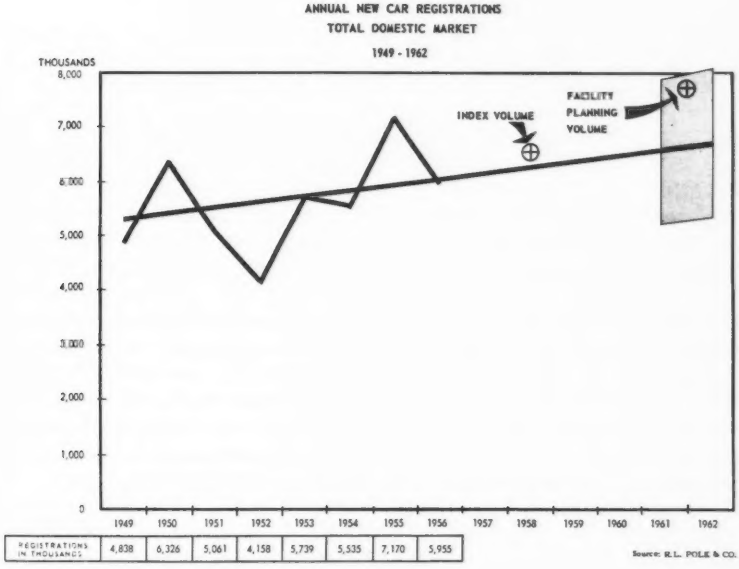

Figure 8

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abandoned. Production programming is the process by which forward planning is eventually translated into current operations. That is why production is programmed on a monthly basis and why the utmost degree of realism is required. Even in a year when sales fall short of earlier projections, it is possible to avoid obsolescence through realistic production programming.

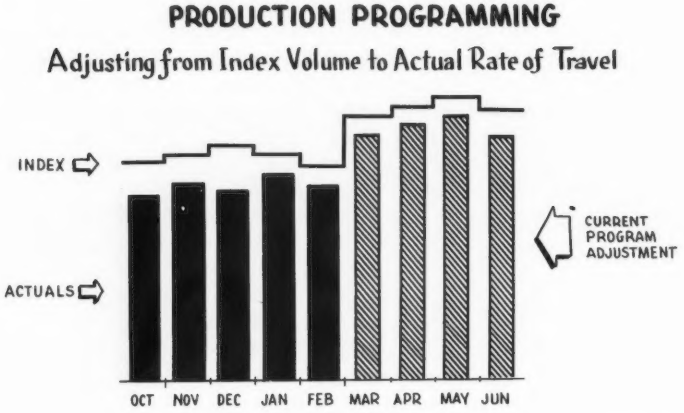

Figure 9

I have purposely avoided too much reference to sales thus far because I felt it would be appropriate to conclude this discussion of volume planning by tying it into the theme—"Marketing's Role in Scientific Management."

The general subject of scientific management covers many activities such as organizing, directing, controlling and communicating. All of these have been subjected to the scientific approach but none of these surpass planning in importance. While volume planning is only one small part of over-all planning, it, too, is recognized as a vital part of scientific management because of its priority in the sequence of the planning process.

Just what role then should marketing play in volume planning, particularly as it relates to the automobile industry? Our principal product is a complicated machine requiring considerable engineering effort and involving a high fixed investment. So naturally the engineers and finance people have always had a large voice

in volume planning. However, we can manufacture or produce only what we can sell, so it is only fitting that sales should have an equal voice.

Looking at forward planning in a positive way, it would seem that real progress is assured when sales are expanded through a definite sales planning program. Increased market penetration can be obtained only by taking part of the market from a competitor. This type of gain can be achieved on a solid foundation only when the sales organization has worked out a comprehensive plan to get representation in "open" points and to improve representation in markets where the product is weak. This means that marketing should set sales objectives that represent forward progress and these objectives should be backed by sound planning. Facility, production, and financial planning are essential but they have meaning only as they reflect sound sales planning. Yes, I believe that marketing should play a major role in that phase of scientific management known as volume planning. The sales objective and sales planning volume have their rightful place among the other better known planning "tools" such as index volume and standard volume. A well documented sales objective or sales planning volume provides an excellent "yardstick" for measuring market performance and eliminates some of the "fluff" from sales promises.

Now let's bring this matter of planning roles just a little closer home. To be brutally frank, we, as market researchers, have not stepped up to our role in volume planning. Some of us have been too much concerned with such technical problems as the implicit deflator in Gross Natural Product when we should have been concerned with how many two-door sedans would be sold next month in District A of Zone B. Don't misunderstand me, the technical matters are important but they must be usable in day-to-day operations. Just because we have missed some forecasts in the past, we don't need to become so cautious that we shy away from volume planning where we might have to "stick our necks out." It is not an easy task to show managements the true significance of forecasts and the assumptions behind them, but it can and must be done if market researchers assume the proper role in volume planning.

Now to end on a constructive note. The rapid development of data processing equipment has opened a vast new field of analytical possibilities. Instead of working with two, three or four variables we can now expand the list to 20, 40, or even more. It seems to me that the automobile company which first "breaks through" in using this new data processing equipment to link car production

and distribution directly to market demand, will have gained a distinct competitive advantage. Much work has already been done in linking production schedules to material releases and car distribution, but it remains for someone to hook them all up to market analysis. Management will always be required to exercise judgment, but the areas of guesswork can be reduced. This is one role which marketing research must play if the bounds of scientific management are pushed out farther in the area of volume planning.

38

ECONOMIC AND SALES FORECASTING IN AN INDUSTRIAL COMPANY

LOREN K. MILLER*

Harris-Seybold Company[1]

ECONOMIC forecasting and sales forecasting are two important and basic parts of a company's over-all forward planning. Much has been written on theory and principles in this area—little on practical applications. This report will be devoted largely to applications, with principles covered only as necessary to an understanding of the application.

PRINCIPLES OF PLANNING

The importance of sound planning to any company is difficult to overemphasize. It can provide guidance for the company's growth program; better products for its customers; better jobs for its employees; and better profits for its shareholders or owners.

A long-range plan—five to ten years—should be fairly broad and general in nature, but specific enough to be an effective guide. It should set a realistic goal or objective, and define in general terms how the objective can be attained; where the products and the markets are to be found. It should be specific enough with regard to facilities and financing to insure their adequacy. And it should be specific on how to develop the organization to carry out the plan—particularly the training and developing of management.

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1. Harris-Seybold Company's name was changed to Harris-Intertype Corporation shortly after this paper was prepared.

Within the framework of the long-range plan, a shorter plan, say one-year, is needed to guide current operations. This plan should be very specific to the extent of setting a shipment objective, cost of shipments, expenses, and an estimate of the ultimate net profit for the year. Generally, these short-range plans are activated by quarterly budgets. The quarterly budget provides routinely for a check of current performance against the objective, and budget meetings provide a vehicle for taking administrative action as required to achieve the objective.

Such an organized planning approach gets away from the all-too-common tendency to operate on a day-to-day emergency basis. It permits research and a factual approach in decision-making; a balancing of longer versus shorter-term considerations. It provides the predetermined guidance needed for better day-to-day administrative action, and permits broader delegation down the line throughout the organization. Operating effectiveness can be readily measured by comparing actual—or often anticipated—results with the objective, and early remedial action can be taken.

PLANNING AT HARRIS-SEYBOLD

In attempting to illustrate various points, I will at times refer to our experience at Harris-Seybold. It might be best to preface these references with a word about our operations. At Harris-Seybold, forward planning is particularly important because of our long lead time—our production cycle averages around six months. We make about 45 different models of printing presses, power paper cutters and related equipment and supplies. We sell to about 15 thousand customers direct through a sales and service organization of about 250 people located in 15 district offices in major U. S. cities. Abroad, we sell through dealers, and in Canada through a wholly-owned Canadian subsidiary.

The presses and cutters which we manufacture are about 90 per cent standard models. They vary in price from about $3 thousand for a small cutter to about $300 thousand for a large five-color sheet-fed printing press. The exception to these standard models are the large web letterpresses which may cost well over $1 million—these are "specials" built for printing such magazines as *The Saturday Evening Post*. These various products are manufactured in four main plants located at Cleveland, Dayton, Westerly, R.I., and Milwaukee.

The manufacturing operation is a job-shop type, in contrast to mass production. Altogether we sell only about 800 machines per year. Production is in job lots, of from six or eight of the

large sheet-fed presses, to as many as 30 machines in a job-lot of the small presses or small cutters. The large web-fed magazine presses are usually made singly. The necd for planning of this type of long-cycle, low-unit-sales product, where the purchase is postponable, should be quite apparent. Now, where do economic forecasting and sales forecasting fit into this picture? Both, of course, are very important to both the long-range plan and the shorter term objective. And they are closely related. For purposes of discussion, however, it seems better to treat them separately.

ECONOMIC FORECASTING

First, the economic forecast: Who does it and how does he do it? It may or may not be the same person who does the sales forecasting. More often the economic forecasting is considered a function of the financial department, whereas the sales forecasting is considered a function of the sales department or marketing research. In a small company, the president may do both, and even more often, he will do the economic forecasting. In a large company, a staff of specialists may be assigned to each job; with the obvious problems of communication and coordination.

The title of the man who does the economic forecasting is relatively unimportant, as long as he meets certain basic criteria: Of course, he must have the capacity to do, or learn to do, the job. He must have the confidence of the organization in his ability. He needs the support of top management. He should be removed from current operations—at least the day-to-day administrative activities,—but not so far as to become "ivory towered." He must be able to support, communicate, and sell his opinions. He must make up his mind carefully, then have the courage to stick by his convictions. And, his success on the job will be greatly improved if he can guess right most of the time!

Assuming that you have a capable man, or a good guesser, how does he do the job? The first thing, of course, is to build a foundation or a frame of reference. Sources of help in economic forecasting are numerous. From the government there is the *Survey of Current Business,* the *Federal Reserve Bulletin* and charts, and *Economic Indicators,* put out by the President's economic advisors, to name a few. Of course, there are such periodicals as *Business Week, Fortune, U.S. News, Newsweek, Dun's Review, Modern Industry, The Wall Street Journal, New York Times,* and your local daily newspaper. Then, you can subscribe to economic consulting services, some of which are very good.

Also, you should not overlook the fact that your bank probably has an excellent economist and he will be glad to exchange views with you periodically. Many of the banks issue monthly business review reports. Some of those with rather wide circulation are Chase Manhattan Bank, The First National City Bank of New York, Guaranty Trust Company of New York, The National City Bank of Cleveland, The Cleveland Trust Company, and The Northern Trust Company. A number of management consultants put out monthly analyses which may be helpful. And such business and industry associations as National Industrial Conference Board, American Management Association, Machinery and Allied Products Institute, and the Machine Tool Builders' Association publish good reports.

Having completely cluttered your mail and having read everything you can find on the subject, you are still faced with making your own economic forecast.

Here you turn to fundamentals. You should, for example, keep your own charts on Gross National Product and the elements that go into it, you should also keep your own statistics on the Federal Reserve Board index and be familiar with its makeup. Depending on how much time you have allocated to this function, you may then want to explore the various sensitive business indexes, and determine your own indicators.

You should keep a sufficient number of these series to be able to intelligently evaluate what you read, discard the prejudiced and inaccurate assumptions, weight the important factors and come up with your own business forecast. Only time can tell how good it is, but if you have applied reasonably good judgment to the important factors, chances are your forecast will be adequate for general corporate planning purposes.

As to the practical application in our company, our economic forecasting, as well as our sales forecasting, is headed by me as a part of my duties as Assistant to the President. A business conditions report is made to the president once each quarter. This is a one-page report which allows practically no room for "reasons." Only conclusions are wanted, and how these conclusions affect our company. Also, a verbal report of ten to fifteen minutes, is made to our board of directors quarterly. Two or three times per year a one-hour meeting is held with our outside economic consultant. The board of directors and top management are invited.

This provides excellent methods of communication at the top level of the organization. Communications to other levels are provided through production scheduling meetings, budget meetings, quarterly financial department meetings, and particularly through the sales forecast review meetings.

SALES FORECASTING

To move on to sales forecasting—here again, it doesn't make much difference what the title of the man on the job is—marketing research director, sales manager, executive staff director, vice president—so long as he is capable and has the confidence of the organization. It is usually better, however, if he is removed from the direct selling operation.

How does he do it? Here also, careful use of the available tools is important. In order of their probable chronological use, the major tools are as follows:

The general economic outlook is the first step and forms the backdrop for the sales forecasting picture.

Next, all available statistics on your industry—markets, trends, and related industry trends should be collected. Exhaustive analyses and charting may be necessary, with thorough exploration of possible lead or other correlations.

Your own company's historical data, patterns and trends must be analyzed thoroughly, and in relation to the industry and general economics.

And finally, you go to your field organization for all the help they can give you.

The first point above on general economic outlook has already been covered. Points two and three cover the large variety of statistical and other methods of sales forecasting about which much has been written and with which you are probably familiar. Anyone just getting started, however, may need to explore many of these methods to determine which may contribute to the best answer for his company or industry. A booklet "Forecasting In Industry," put out last year by the National Industrial Conference Board, covers the subject in great detail and is well worth reading. For purposes of this discussion, I would like to emphasize the practical techniques of using the field organization for forecasting.

The successful extraction, evaluation, and use of field sales organization information is a delicate operation, but one well worth developing and exploiting. Properly deflated for sales optimism, and after screening and evaluation by experienced sales executives, this field opinion is hard to beat. It is particularly helpful in estimating the product mix between various models and sizes. Statistical methods may be excellent for projecting total sales, but for product mix, the salesmen's estimates are probably the best source of guidance.

Not to be overlooked are the corollary benefits obtained from a field survey of salesmen and district sales management. A few

of the areas where helpful information may be obtained are ideas on product improvements and new features; information on competitive products and activities; sales planning and administration effectiveness; sales coverage and adequacy of personnel; and personnel appraisals.

These corollary benefits, of course, must be kept secondary to the primary purpose of getting a good forecast. But in many instances, discussions of these subjects will add character to the sales forecast rather than detract from it.

THE FIELD SURVEY

At Harris-Seybold we make a complete survey of our field organization, right down to the salesman—on his prospects and what units by models he expects to sell. This is achieved through a questionnaire sent to the district managers, requesting estimates in units for each of our 45 models for districts by six-month periods for the next eighteen months. Depending on the geographic nature of his territory, the district manager either calls the salesman in and goes over his prospects with him, or he sends the survey out and has the salesman send in his estimate with supporting data.

As soon as the district manager is ready—we allow him about two weeks—either the marketing director or the assistant sales manager and the forecaster go to each of the districts and sit down with the district manager, often joined by his leading salesmen, and go over his estimates with him in detail. We help him all we can to improve his forecasting technique, but we also form an evaluation of the quality of his estimate and, among other things, pick up a pretty good feel of trends in the market.

The district managers' reports are tabulated into the "District Managers' Estimate." Then a committee consisting of the forecaster, the manager of planning and budgets, the assistant sales manager, the marketing director, the market study manager, the manager of sales engineering, and the coordinator of production planning, review the district managers' estimate and come up with a "Preliminary Sales Forecast." At this point an attempt is made to bring all the known information in the company to bear upon the problem; the economic outlook, trends in related industries and in our industry, competitive conditions, market surveys, promotion and sales plans, new products, etc.

This "Preliminary Forecast" is then reviewed in conference with the vice president for sales and the vice president and general manager and the results of this meeting become the

"Official Company Sales Forecast." This is sent to the president with a memo pointing out any major trends or important aspects of the forecast. Copies go to all departments of the company who need the information for their planning—particularly manufacturing and financial.

PLANNING

The production planning department, with this as a guide, sets up new "Production Schedules" which establish a shipment estimate for the year in specific models of machines. From this shipment estimate, the cost department can develop cost of shipment figures. And, during this period, the budget department has been developing departmental budgets on manpower, capital expenditures, advertising, sales-service-and installation expenses, administration and general expense, and others, to come up with total estimated expenses. This brings us down through the operating statement to the profit-before-tax figure—thus establishing an estimated operating statement or plan.

This annual operating plan with its specific shipment volume and profit objective is reviewed at a general management meeting. Changes may be made at this point and upon approval of the general management group and authorization by the president, it becomes the "Annual Operating Objective" for the coming fiscal year.

During eleven years of experience with this type of planning, in only one year have we missed our annual objective by more than 10 per cent. We feel that a forecast is satisfactory if it is within plus or minus 10 per cent of the actual results. Attempts to obtain greater accuracy in our type of business are probably unrealistic.

Accuracy, of course, is important to making a sales forecast and in setting an annual objective. However, of almost equal importance is obtaining participation, teamwork, and a feeling by all those concerned that the sales forecast and the annual objective are joint decisions, and that all those who participated share the responsibility for achieving the established objectives.

SUMMARY

In summary, planning is an essential function of a successful business, although the degree of its essentiality may vary with different types of companies and industries.

Economic forecasting is an important part of planning and

should not be considered as restricted to the professionals, but should be integrated into the corporate planning and sales forecasting. Advantage should be taken of the variety of special assistance in this area.

Sales forecasting is the heart of planning and one of the most important decisions made in a business. If it is inaccurate, other determinations based on it will be inaccurate. There is no perfect sales forecasting procedure to fit all companies. If we use the tools and the tested methods available to us, leaving room for personal judgment to supplement all other factors, chances are we will achieve a reasonably good sales forecast.

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THREE WAYS TO MAKE AN INDUSTRIAL SALES FORECAST

ROBERT O. FERNALD*

National Lead Company

THE purpose of this paper is to present some specific examples of different methods of forecasting.

CORRELATION OF INDUSTRY SALES TO ECONOMIC FACTORS

The first method we shall call "Correlation of Industry Sales to Economic Factors." This example, as shown by Figure 1, is on paint, an item used both by consumers on homes, and by industrial users on bridges, highways, pipelines, automobiles, appliances, furniture finishes and a host of other things.

In general—and note I say "in general"—total paint sales correlate with gross national product. The top line in Figure 1 shows "Gross National Product" in terms of 1947 to 1949 dollars from 1929 to date. In addition, the top line shows a forecast to 1965 using an average of figures published by several well-known economists.

The second line is total paint sales of all kinds; retail, or "trade sales" as they are known in the paint industry, and "industrial sales" from 1929 to 1955. These are from the official "Facts For Industry" series published by the Census Bureau, but have been deflated to 1947-1949 dollars to be comparable with our Gross National Product figures.

At the very bottom of this figure, we have related these two series and have indicated total paint sales as a percentage of

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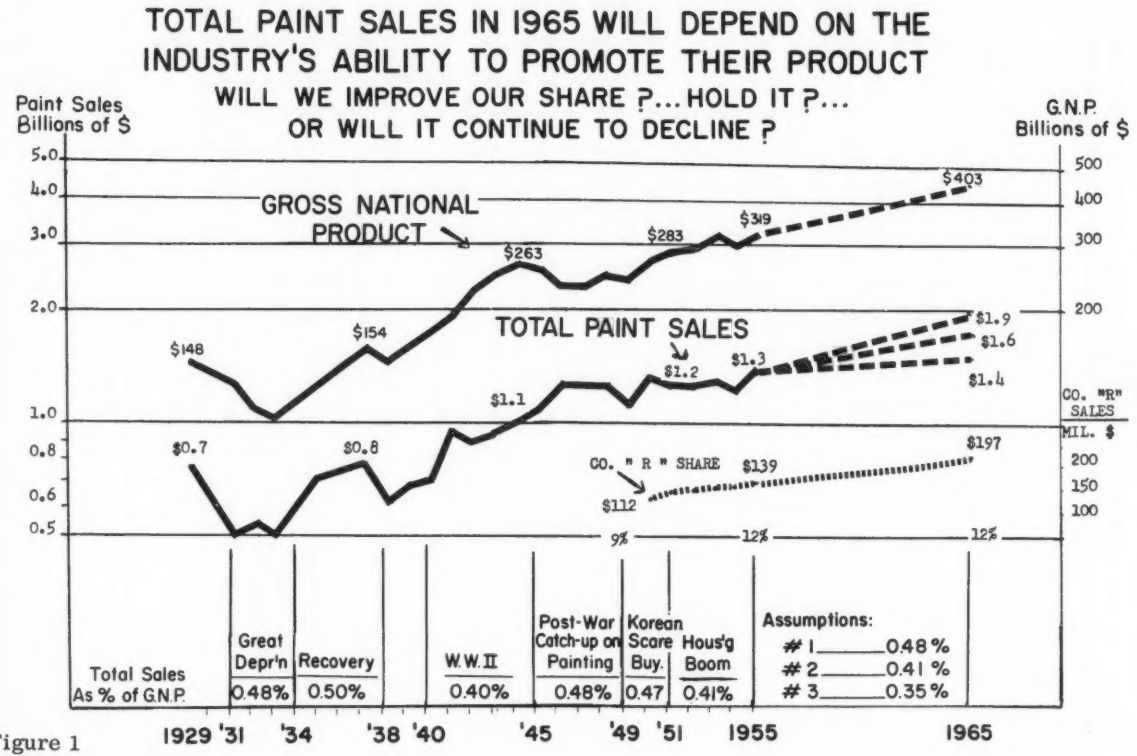
TOTAL PAINT SALES IN 1965 WILL DEPEND ON THE INDUSTRY'S ABILITY TO PROMOTE THEIR PRODUCT
WILL WE IMPROVE OUR SHARE ?... HOLD IT ?...
OR WILL IT CONTINUE TO DECLINE ?
Paint Sales Billions of $
G.N.P. Billions of $
GROSS NATIONAL PRODUCT
TOTAL PAINT SALES
CO. "R" SALES MIL. $
CO. " R " SHARE
$148
$154
$263
$283
$319
$403
$1.9
$1.6
$1.4
$1.2
$1.3
$1.1
$0.7
$0.8
$112
$139
$197
9%
12%
12%
Total Sales As % of G.N.P.
Great Depr'n 0.48%
Recovery 0.50%
W.W.II 0.40%
Post-War Catch-up on Painting 0.48%
Korean Scare Buy. 0.47
Hous'g Boom 0.41%
Assumptions:
1 0.48 %
2 0.41 %
3 0.35 %
1929 '31 '34 '38 '40 '45 '49 '51 1955 1965

Figure 1

Gross National Product. The following points should be observed. During the great depression, paint sales were about .48 per cent, a little less than half of one per cent of gross national product. During the recovery, paint sales held a little greater percentage of Gross National Product (.50 per cent). Then during World War II, when there was a shortage, paint sales dropped down to .40 per cent.

After the war when homeowners were catching up on their painting, the ratio went back to 0.48 per cent. It stayed about the same at the time of the Korean War when dealers started hoarding up paint and putting a supply down in their basements. Then in the latest five-year period when there has been a considerable housing boom, the share has been back down to .41 per cent. So, you see, there hasn't been perfect correlation.

We think we know why the share has been less in spite of the fact that there has been a million-plus new homes built every year since 1951. Something has been going on, a technological change, if you want to call it that. Not only has there been a change in the type of houses being built, but there has also been a reduction in the number of coats of paint being applied.

The paint industry has formulated a new type of paint that will do a wonderful hiding job with only one coat. All of the manufacturers have introduced one-coat house paints. When you only put on one coat instead of two, you naturally cut your consumption down considerably.

Furthermore, the new homes that are being built contain a proportionately higher number of brick homes than previously existed. Here only the trim needs painting. Another fast growing type of siding is asbestos shingles which don't have to be painted during their first five years. There are also more large glass windows being employed. Thus we have less surface to paint and the paint today has better coverage. This has resulted in the fact that total paint sales have a declining share of Gross National Product, the total value of all goods and services sold.

In forecasting the future we have to make up our mind as to just what share of total Gross National Product we think that the paint industry is going to have. Are paint sales going back to the .48 per cent they held after the war or the .50 per cent they had back in the 30's? Are they going to hold at the present .41 per cent or are things going to get a little tougher and are paint sales going to have only .35 per cent by 1965?

These are assumptions that the forecaster has to make, based on what he thinks is going to happen. If we assume total paint sales in 1965 will be back up to .48 per cent of the estimated 403

Billion Gross National Product then paint sales will be 1.9 billion dollars, an increase of 46 per cent over 1955. The middle line in 1965 reaches 1.6 billion dollars where we think industry sales will be on a constant dollar basis if the ratio to Gross National Product stays at the current .41 per cent. This represents a 23 per cent increase since 1955. The least favorable of our three forecasts shows where sales would be if the paint industry declines further to .35 per cent of total gross national product. On this basis sales in 1965 would be only 1.4 billion dollars, an 8 per cent increase over 1955.

I suppose it is an easy way for market analysts to pick out the middle road. I seriously considered picking out Assumption #3, as shown on Figure 1, the least favorable one. However, I picked out Assumption #2, the middle one, in order to be a little optimistic. After all, all of these new houses are eventually going to mean more business. Furthermore, we are eventually going to get stabilization between the number of two-coat and one-coat jobs being applied. Therefore as the population and number of houses go up, total paint sales are going to be headed back up again after a rather protracted period of even sales.

So far our example has taken us from the economic factor of Gross National Product to total paint industry sales. This leaves us only the job of forecasting what any one company sales would be.

The bottom line on Figure 1 shows a theoretical company which we will call "R." Sales of this company increased from 112 million dollars or 9 per cent of the market in 1950 to 139 million dollars or 12 per cent of the market in 1965. After this has been determined the forecaster has to make another assumption. Are company sales going to hold their share of the estimated 1.6 billion dollar market in 1965 or continue to grow to 13 per cent, 14 per cent or 15 per cent? For this example we assume that business is getting fairly competitive and so we estimated that Company "R" would continue to hold 12 per cent of the market. So 12 per cent of the 1.6 billion dollar industry forecast gives us our forecast of an estimated 197 million dollars that Company "R" sales will be in 1965. As this example is on a constant dollar basis, gallonage sales would thus be up 41 per cent or about 4 per cent per year.

This example shows the broadest possible approach. It is good for forecasting old established industries that are going up and down with the nation's economy. I don't believe it is nearly as good for rapidly expanding or declining industries.

POPULATION GROWTH AND PER CAPITA SALES METHOD

The second method is an easy one when you need to get a forecast in a hurry. I call it the "Population Growth and Per Capita Sales Method."

On the top line of Figure 2 we have indicated industry sales of metal "Q" in thousands of tons over the last 13 years. This is a theoretical case used as an example only. There is no real metal "Q."

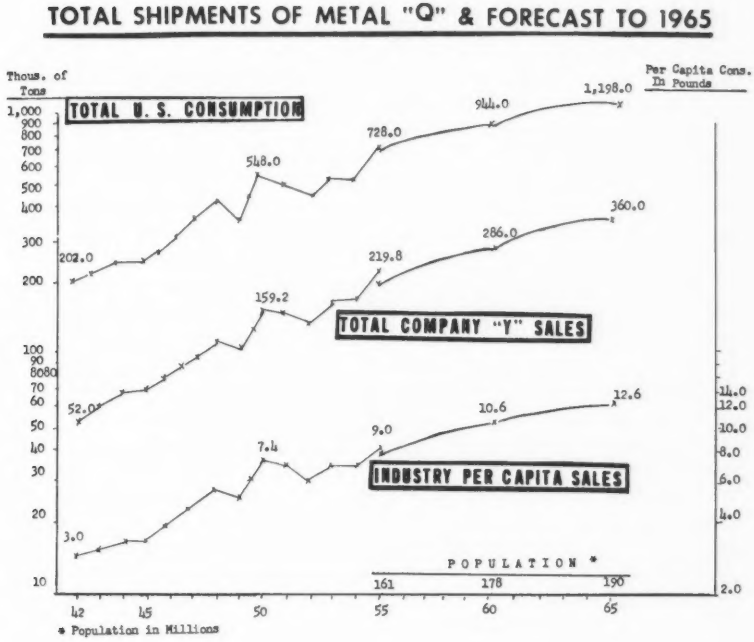

Figure 2

The line on the bottom is the per capita industry sales in pounds, and you will see that on a per capita basis the total use of

this particular metal has grown in pounds per person from over 3.0 in 1942 to 7.4 in 1950 to 9.0 in 1955. A growth pattern like this indicates that the product is being used in more and more applications, or in larger proportions in the same end products as more customers become familiar with it.

The first step in forecasting metal "Q" sales was to estimate what per capita consumption might be in 1960 and 1965. We did this on three different assumptions—only the middle one is shown on Figure 2—we also drew what we called an "Optimistic Per Capita Trend" and we made a pessimistic one too. To make the chart simple we have plotted only the middle forecast, or the average of the two. All three lines were free-hand extensions of where the growth curve might go.

The second step was to determine what the population would be in 1960 and in 1965. The Census Bureau tells us the population is going to grow from its present level of 161 billion to 190 billion by 1965. Of course the Census Bureau also has maximum and minimum figures which they think the population is going to reach. These shown on Figure 2 are the median figures published by the Census Bureau. Having established what we think the per capita sales are going to be and what the population is going to be, we can then multiply one by the other and get the projected black line on the top as to what total consumption of metal "Q" will be by 1965. In this example it indicates a total volume of 1,198,000 tons.

Then we go back and determine what Company "Y's" sales will be. As a percentage of total sales Company "Y's" sales have grown from about 25 per cent of the market in 1942 to 30 per cent by 1955. In this case we assume that even with others coming into the industry, Company "Y" is going to hold its 30 per cent. By taking 30 per cent of the 1965 projected industry sales of 1,198,000 tons, we come back to estimated Company "Y" sales of 360,000 tons.

I suppose some people will think this is not very scientific, but it has been my experience that sometimes the easiest and the simplest methods of forecasting turn out to be the best in the end.

The advantage of this particular method is that it is quick and easy to do. There is a disadvantage. This particular method assumes that its use in the future will continue to grow following the curve it has established. If we were to go out and survey each industry that uses this product we might find out that its rate of use in some products may have leveled out, or be declining. If this has occurred and is not compensated for by a greater rise in other products, past history may not repeat itself in the future. We will pass over these two methods to a third one which I like best.

XUM

INCREASED USE OF CATALYST "P" IN AUTOMOBILE TIRES
SHOULD INCREASE VOLUME 33% BY 1965

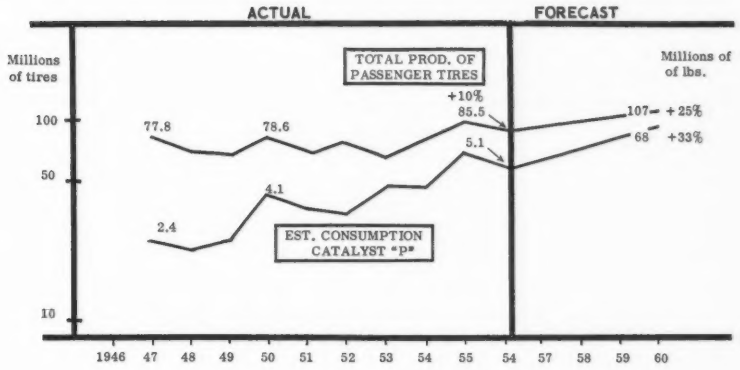

Figure 3

THE RATE OF MATERIAL USE METHOD: DIRECT INTERVIEWING

Figure 3 is entitled, "The Increased Use of Catalyst 'P' in Automobile Tires Should Increase Volume 33-1/3 Per Cent by 1965."

This chart concerns the third method of making an industrial sales forecast. I prefer it to the other two and call it, "The Rate of Raw Material Use Method." It is employed for each major industry that consumes a given industrial product.

This particular type product is a chemical used in making six or seven end products of which tires are only one. The first job of forecasting sales of Catalyst "P" in the tire industry is to plot past sales of passenger car tires and to determine what the tire industry believes sales will be by 1960.

The market analyst should make it his business to know and see his customers or his potential customers quite regularly. There is nobody better to talk to because after all they have spent a lot of time figuring out what their product is going to do. The

forecaster's job is then to try to tie in what his product is going to do in relation to what their product is going to do.

The top line shows total automobile tire production, running along with its peaks and valleys. There were some big years at the beginning because it was near the end of the war. There is another peak at the time of the Korean War. The last couple of years reached new highs. The forecast, an average of what interviews with three tire companies indicated, shows that by 1960 tire production should be up approximately 25 per cent.

The second step is to regularly survey your customers' technical people. The forecaster should know what is going on in regard to their rate of use of your product in their product. Formulas are changing, the amount being used is changing. It might be going up, it might be coming down. A competitive class of items could be cutting in to the industry's use of Catalyst "P." In this case Catalyst "P" is growing. On the average the tire industry used .03 pounds per tire in 1947, .06 in 1956, and they say they will probably be using .064 pounds per tire by 1960.

The tire forecast times the forecast rate of use of Catalyst "P" equals the best industry forecast on the use of Catalyst "P" that I know of. In this case 1960 use represents 6.8 million pounds, a 33 per cent increase over 1955 consumption.

Economic factors, population and auto production are involved in the tire companies' forecasts and I believe that the tire people are the best experts in interpreting what will make tire sales grow. However, as industrial market analysts, you and I have to make sure that we know the rate of use of our products in the products of our customers, and what our customers think that rate of use is going to be in the future.

The third line indicating a company's sales isn't shown but that again would be your sales against the industry sales. Some assumptions would have to be made as to whether you were going to hold your share, increase it, or lose some of it, based on everything you plan to do and/or what you think your competitors will do.

Now ask yourselves these questions: Do you have your customers' forecast on what their industries are going to do? Do you know what the weighted average rate of use of your product is in your customers' products and what the trend is likely to be? If you don't you will be well advised to begin to find out.

XUM

THE RATE OF MATERIAL USE METHOD: MAIL QUESTIONNAIRE

Let's look at a variation of this third method. Can forecasts be made with the help of mail surveys? This is a subject in which I am quite interested and I can assure you that mail surveys can be used to help you in forecasting work.

Let's take a survey of the use of plastics by the foundry industry and see how we used a mail survey to help us forecast sales. The use of the mail technique is very helpful in an industry that has many, many units, and the foundry industry is one of those.

COMPOSITION OF THE FOUNDRY INDUSTRY

Number of Employees	Total Foundries No.	Total Foundries %	% of Total Capacity
Over - 1000	57	1	22%
250 - 999	393	7	32%
50 - 249	1470	25	32%
Under 50	4018	67	14%
Total	5938	100%	100%

Sample Selected		Sample Obtained	
Every One	57	28	Every Other
Every Other One	196	88	Every Fifth
Every Fifth	294	96	Every 15th
Every 40th	100	33	Every 120th
Every 11th	647	245	Every 23rd
Representing 44% of Capacity		Representing 20% of Capacity	

Figure 4

Figure 4 shows the composition of this industry. The first column shows that there are 5,938 foundries in the United States. We have then broken them down into four size categories according to the number of employees they have. This was obtained from an IBM tabulation of one of the foundry directories. It told us there were just 57 foundries that employed over a thousand

employees. As shown in Figure 4 there were 393 foundries that employ from 250 to 1,000 people and when you get down to the foundries employing under 50 there are over 4,000 of them. The third column shows that the 57 large foundries account for 22 per cent of total capacity. This makes them very important in any survey. At the other end of the scale some 67 per cent of the foundries or 4,018 account for only 14 per cent of total foundry capacity.

We couldn't go out and visit almost 6,000 foundries and even a 10 per cent sample would mean calls on 593.

This survey was on the use of a plastic resin which we will call "X." It is used in a type of casting known as shell molding. The common way to make molds is with the use of a special sand which is a highly skilled job. The molten metal is poured into the sand mold to form the shape in which the sand is pressed. Then there are steel molds which are very expensive but which are good for long production runs such as are required by the automobile companies.

The newest development is called "shell molding." In this process sand is bound together with a plastic resin and baked. It gives a light thin mold with a very smooth surface. Metal parts formed from shell molds require less machining and, therefore, have certain economic advantages. So, our job here was to find out what the future market for Plastic "X" would be in this new type molding known as shell molding.

In order to pick out a sample we went to our publishing friends and said, "We need a list of the names and addresses of all the foundries that have over a thousand employees. We need a list of every other foundry that employs from 250 to 1,000 people." Every fifth name was asked for in the 50 to 250 group and every fortieth name in the under 50 group. We could afford to do this because we knew that shell molding was confined pretty much to large foundry operations. However, we didn't want to overlook the possibility that small foundries would find it economical to also undertake this method.

We picked out a sample of 647 from the method explained above. Twenty-eight or 50 per cent of the largest foundries were seen personally in order to be sure we were getting a true picture and in order to pretest the questionnaire to be sent to the 619 that remained in the sample.

A total of 217 questionnaires were returned out of the 619 sent for a return of 35 per cent. Ordinarily we can obtain a much higher percentage but this was good for the long questionnaire we felt it was necessary to use.

XUM

The key questions that we used in order to obtain data for forecasting the future for shell molding and the use of Plastic "X" are shown in Figure 5. This refers to malleable iron, but similar questionnaires were used for gray iron, steel, bronze, and aluminum.

SURVEY ON SHELL MOLDING

(3) AS A FOUNDRY'S SIZE APPARENTLY HAS AN EFFECT ON WHETHER OR NOT IT IS ENGAGED IN SHELL MOLDING, WOULD YOU CHECK OFF IN BRACKETS BELOW WHICH APPROXIMATELY REPRESENTS YOUR SIZE IN TONS PER DAY OF MALLEABLE IRON (TOTAL WHETHER SHELL MOLDED OR NOT)?

0-1 ( ) 2-5 ( ) 7-10 ( ) 20-30 ( )

1-2 ( ) 5-7 ( ) 10-20 ( ) 30-50 ( ) OTHER ( ) _____
PLEASE INDICATE

(4) IN ORDER THAT WE CAN GET SOME IDEA OF HOW FAR THE SHELL MOLDING OF MALLEABLE IRON HAS GONE, COULD YOU TELL US ABOUT WHAT PERCENTAGE OF YOUR MALLEABLE IRON PRODUCTION IS NOW SHELL MOLDED?

0-5% ( ) 10-15% ( ) 20-25% ( ) 30-40% ( ) 50-60% ( )

5-10% ( ) 15-20% ( ) 25-30% ( ) 40-50% ( ) OTHER ( )_____%
PLEASE SPECIFY

(5) CONSIDERING THE NUMBER OF YEARS IT HAS TAKEN YOU TO CONVERT THIS MUCH OF YOUR MALLEABLE IRON CAPACITY TO SHELL MOLDING, WOULD YOU ESTIMATE THE PERCENTAGE OF YOUR PRODUCTION YOU MIGHT CONCEIVABLY REACH BY THE END OF 1955? _____%

(6) WHAT PERCENTAGE OF YOUR TOTAL MALLEABLE IRON PRODUCTION DO YOU FORESEE AS NOT POTENTIALLY ADAPTABLE TO SHELL MOLDING BECAUSE OF SIZE OR TYPE, ETC.?_____%

(8) WHAT DO YOU CONSIDER TO BE A WORKABLE AVERAGE PERCENTAGE OF RESIN TO USE PER MALLEABLE IRON SHELL MOLD ? _____% FROM YOUR PAST EXPERIENCE, HAS THIS BEEN DECLINING? YES ( ) NO ( ) WHAT DO YOU BELIEVE THIS PERCENTAGE MAY REACH ? _____%

Figure 5

The first key question, number three was as follows: "As a foundry's size apparently has an effect on whether or not it is engaged in shell molding, would you check off in brackets below which approximately represents your size in tons per day of malleable iron, (steel, bronze, aluminum, etc.), whether it is shell molded or not."

In other words, you can't go in and ask a customer "What is your total production?" or "What are your total sales?" Experience has told us they are quite willing to check off within a certain range. This range is fairly small. As shown it goes from 0 to 1 tons, 1 to 2, 2 to 5, 5 to 7, 7 to 10, etc. In the end we take the median figure of the range given us in determining who is big and who is little. We don't want to just add the data together and determine simple averages. We want weighted averages.

The next question, number four, was also important: "In order that we can get some idea of how far the shell molding of malleable iron has gone, could you tell us about what percentage of your malleable iron production is now shell molded?"

Here we used the range method on a share basis. In other words, we give them a chance to check off if they are now using shell molding on 0 to 5 per cent of their total production, 5 to 10, 10 to 15, etc. Again we take the median figure of the bracket checked.

The third key question was number five: "Considering the number of years it has taken you to convert this much of your malleable iron capacity to shell molding, would you estimate the percentage of your production you might conceivably reach by the end of 1955."

The year 1955 was the year following the survey. So question four gave us the percentage of their total production in shell molding in 1954 and question five gave us the percentage they thought they might have in 1955. They either weren't going to go up anymore in their use of shell molding, they might have tried it and quit or they might say, "It is going to grow considerably."

Next we asked: "What percentage of your total malleable iron production do you foresee as not potentially adaptable to shell molding because of size or type?" This was designed to determine the upper limits of shell molding.

There is so much metal cast that even getting 25 per cent of it in shell molding would result in a tremendous market. There had been considerable conjecture on this potential in the trade press and we wanted to pin it down to a reasonable level. In other words, we were asking the respondents to pick out an outside figure. The shell molding of cast iron water pipe, other big items or intricate pieces would be difficult to produce this way.

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Question eight was asked to determine the rate of use of plastic "X." "What do you consider to be a workable average percentage of resin to use per malleable iron shell mold? From your past experience has this been declining? What do you believe this percentage may reach?"

PAST, PRESENT, AND ESTIMATED FUTURE RELATIONSHIP OF SHELL MOLDING VOLUME TO TOTAL CASTING VOLUME

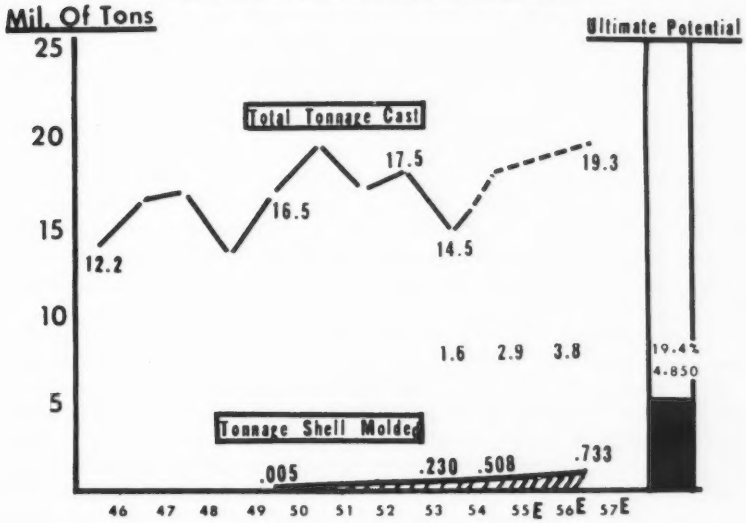

Figure 6

Figure 6 shows what we found by the time we put all this information together. The top line shows the Census Bureau data on the total tonnage of all metals cast. This goes up and down with total steel production.

The dotted line was drawn by us based on the forecasts we obtained from our friends in the steel industry. The past, present

and future relationships of shell molding volume to total casting volume are indicated by the percentages shown in the middle. This came from question four. In 1953, the weighted average amount reported as shell molded was 1.6 per cent. If we apply this to the tons cast then the amount shell molded would be 230,000 tons.

The percentage to be shell molded in 1955 came from question five. It went up to 2.9 per cent which is a very sizeable increase. Based on a larger anticipated market total tonnage shell molded went up to an estimated 500,000 tons.

This still left us with the problem of estimating 1956 shell molding volume or the next year out in our forecast. The data from the respondents were broken down according to the number of years each company had been in shell molding. We took those that had been in five years, those that had been in it four years, and those that had been in it three years, and found that the more experience they had the larger share of the total tonnage they had in shell molding.

So it was assumed that those that had been in shell molding one year would follow the growth pattern on a share basis of those that had two years. It was also assumed that those that had two years experience would grow to the same share held by those having three years experience. Adding up the present users and allowing for the number of shell molders to also increase indicated that about 3.8 per cent of total tonnage would be shell molded in 1956.

The answers to question six indicated that the experts in this business felt that 4.8 million tons or 19.4 per cent of estimated 1965 tonnage cast would be the upper limit that they could foresee as ever being shell molded based on current technical knowledge. This brought us down to earth and gave us an ultimate potential. At least we weren't looking up at the top of that bar where our total tonnage cast is supposed to be over 25 million tons by 1965.

The last job based on question eight was to convert the total amount of metal shell molded shown in Figure 6, to the total amount of resin involved using the information obtained from question eight. This appears in Figure 7. The amount of resin used per shell mold was found to be declining as foundry men became more adept at using it. The total use showed a nice growth curve.

In this project we surveyed a market because we wanted to know what the future was going to be and whether we would be interested in buying a company already in the business. We had a forecasting job to do. We didn't want to go to see everybody so we used the mail technique to accomplish our purpose.

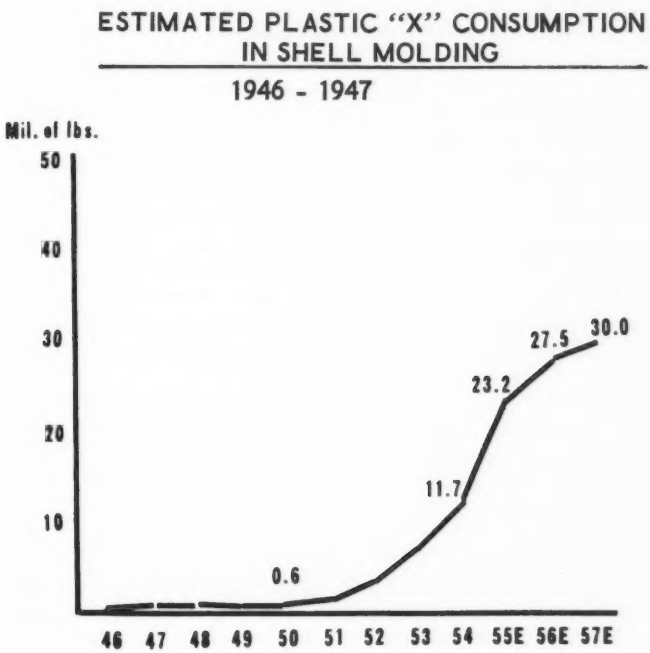

Figure 7

A NEW EXPERIMENTAL METHOD OF FORECASTING

Now we will go on to the last case which represents what I believe is a unique and experimental method of forecasting as applied to industrial products.

I had been thinking about the test marketing methods that we used to apply on soap products where we would put a new product into a cross section of stores in a number of test towns, a la Nielsen, and find out after one, two or five months what share of a given market we were able to capture. These data in turn were expanded to a total country-wide basis to forecast nationwide results which might be achieved under similar conditions. It seemed to me that there must be some way to do this on an industrial product like our chemicals and metals.

The following theory finally was evolved. We really have a test

operation going on when we bring out a new industrial product. In the first year we might have ten customers. In the second year we might have twenty customers and in the third year fifty customers. If we analyze our sales to each customer according to the year they started buying from us we should have three groups or "test areas" each one a little more advanced than the other.

Then it became apparent that while sales were growing in each group, the groups were composed of customers of different sizes. While this did no harm it introduced another variable. In order to overcome this each customer was visited to determine approximately what share of his total production used our product in each year that he used it. When these data were charted it produced some very interesting trends as shown in Figure 8 which is entitled, "The Customer's Metal Soap 'X' Grease Business as a Percentage of His Total Grease Business."

In order to give you a little background I will explain what a metal soap is and how they are used in greases. Grease is made out of oil jelled by the addition of metal stearates. The principal greases contain lead, calcium, sodium, or lithium stearates commonly called metal soaps.

As shown in Figure 8, we determined that those customers who started using our product in 1950 converted less than 1 per cent of their grease sales to it. The second year they converted 3.1 per cent and in the third year this rose to 4.8 per cent. Then we asked them what percentage of their total grease business did they think they would convert next year. They felt that it would go up to 7.5 per cent.

The 1951 starters were next surveyed and here again we found a similar pattern. Here we had only two years actual experience, 1951 and 1952, and the customers estimate for 1953. Then we went to those who just started in 1952 and they converted less than 1 per cent of their business to our product the first year but estimated it would go to 1.9 per cent the second year. This proves one point pretty conclusively. Companies just don't accept new and untried products rapidly. They test them out, try them out, put them in a test area and things grow on a share basis relatively slowly.

Once we had plotted the actual trends we extended these curves out to indicate what we thought would happen in the future. It was first necessary to estimate what the 1950 starters would do in their fourth, fifth and sixth years. We assumed that the 1951 starters would follow the slope that their predecessors did. The same thing was done in each succeeding year. For 1953, 1954 and 1955 we also had to determine how many new customers we might

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get and how big their grease business would be. Once this was determined we estimated that their relative acceptance of our products would follow their predecessors.

THE CUSTOMERS METAL SOAP "X" GREASE BUSINESS AS A PERCENTAGE OF HIS TOTAL GREASE BUSINESS

Under Less Favorable Assumptions

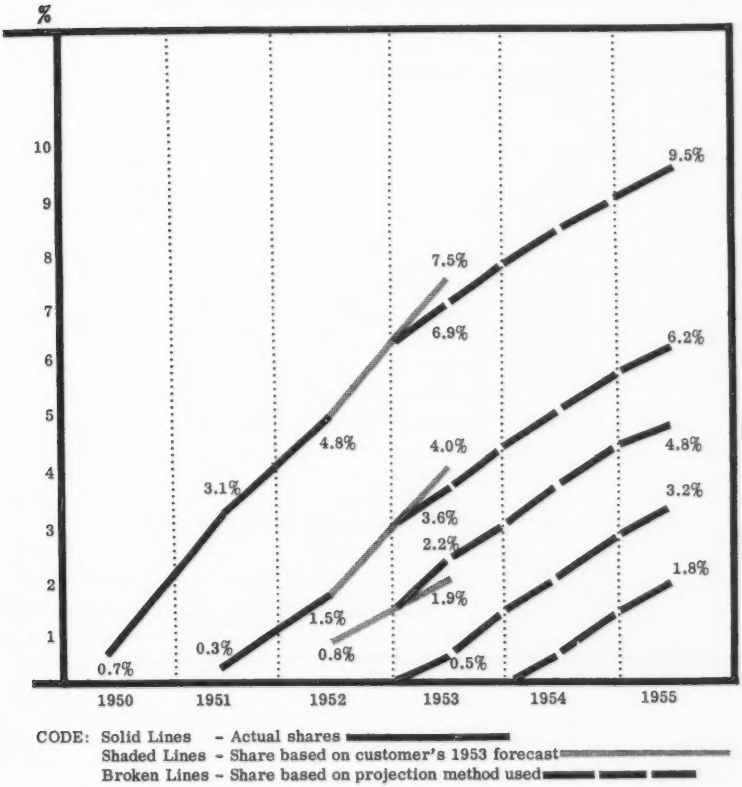

Figure 8

The broken line forecasts were curved in this example which we labeled the "Less Favorable" forecast. Another chart was made showing what would happen if they continued to grow in a straight line at the same rate of growth. This was labeled the "most favorable" forecast. The data thus obtained were converted back to the pounds of our product which it might represent, thus giving us a three-year forecast.

ACTUAL SALES OF METAL SOAP "X" TO THE GREASE INDUSTRY & INDUSTRY FORECAST THRU 1955

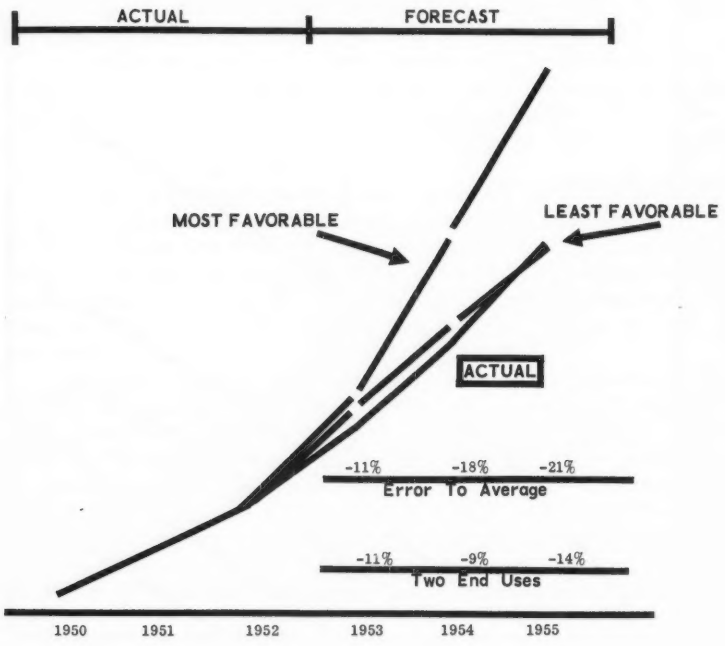

Figure 9

Figure 9 shows the most favorable and least favorable forecasts in broken lines and the actual sales from 1950 through the period of the three-year period of the forecast.

Actual sales followed the least favorable estimates closely, -8 per cent in 1953, -4 per cent in 1954 and no difference in 1955. This, however, was theoretical as we had given management a range within which actual sales might fall.

The manufacturing department in planning new production facilities took the average between the most favorable and less favorable lines, which doesn't appear on the chart, as their guide. Actual sales were 11 per cent below the average forecast the first year, 18 per cent below the second year and 21 per cent below the third year. This may not appear to be too accurate to some, but on a new and different product doubling in volume every year we felt pretty good about it. We were erring on the right side because the average forecast gave us sufficient production to meet the demand. However, there is more to this story. This product was used in another industry where conditions were more favorable than they were in the grease industry. We followed the same technique in forecasting sales for this end use.

We combined the sales and forecasts of the two industries together in order to determine the total amount we would need to produce. We found that actual sales in the first year of the forecast were -11 per cent below the average forecast for all end uses. In the second year they were -9 per cent off and in the third year we were 14 per cent off. In the books of many people 14 per cent might not seem too accurate but on entirely new and different products, of which this was one, I consider it a good forecast. This is especially true when the forecast covered a period which would see a tremendous increase in sales.

This is a unique method of forecasting industrial sales. It is certainly different from the other metals shown. It is going to require considerably more testing. However, I think it has real possibilities and we intend to use it some more.

Forecasting is not yet a science where all one needs to do is fill in the formula and compute the results. Many variables, some measurable and some not, are always at work to test the forecaster's skill. Forecasts must be made to aid management in their decisions. The market analyst should make them and the more he practices his skills the better his forecasts should become.

To sum up: we have covered three ways to make an industrial forecast. The first was the correlation of industry sales to economic factors. The second method was forecasting the population growth and the per capita rate of growth of your product—the quick and easy method.

The third method was studying the rate of material use of your

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product in your customer's product and correlating this with your customer's forecasts. There were two variations of this; doing it by direct interview and by the use of mail questionnaires.

And last, I gave you a new experimental one in which you study your customer's business on a share basis according to the year he started buying your product.

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LONG-RANGE PLANNING IN THE CHEMICAL INDUSTRY

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Union Carbide Corporation

AN old saying in the chemical industry is, "Nothing is constant but change." Long-range planning has become the accepted method of coping with change; it is a means of taking advantage of change; and, in the chemical industry it serves the very important function of instigating change.

In spite of the general acceptance of the need for long-range planning, many companies question whether their planning procedures are keeping pace with technological, economic, and social advances. They are concerned that they may not seize the opportunities that change brings; they are anxious to overcome the obstacles to their own progress. This paper will report on, first, the changing characteristics of the chemical industry and, second, how some companies are planning to progress in this environment.

WHAT IS LONG-RANGE PLANNING?

As a preliminary to the discussion we define planning as a process whereby a company establishes for the sum and main parts of its business (1) *positive goals* for sales, volume, profit, and investment during a given period, and, (2) *adequate programs* to achieve these goals. Long-range, at least in the chemical industry, means the longest period over which plans can and must be made. In all but the smaller companies, three years is as

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brief a span as can be called long-range. Most long-range planning for commercial products covers a five- to ten-year period. For basic research, financial commitments, and major raw material supplies, plans may be made for 15 to 20 years ahead or even longer. As the characteristics of the chemical industry are considered in this talk, we are focusing attention on the period five to ten years in the future.

CHEMICAL INDUSTRY CHARACTERISTICS

The need for long-range planning in the chemical industry is determined largely by its fundamental characteristics; its size, growth rate, its customers, its competitive environment, and its scheme of operations. Individual companies organize their long-range planning system in tune with these fundamental traits of the industry.

Chemical Industry Size and Growth Rate

The $8 billion chemical industry is one of the nation's more important industries. It has attained its present size by expanding for many years at a growth rate about twice that of the total U.S. industrial economy (See Figure 1). This has meant a growth rate approximating 12 per cent per year in dollars and 9 per cent per year in pounds. These data are for the production of industrial organic and inorganic chemicals as reported by government sources. Products often included in chemical figures, such as paints, fertilizers, soap, and like materials are excluded.

Most chemical companies expect that the industry will continue to grow at something near the historical rate. Since this is a diverse industry, many major production units will thus have to be built in the future. Frequently, these are continuous units committed to the output of a single product or product group. To be profitable they must operate at close to capacity for five to ten years. Careful consideration of the market and technological variables which will affect such investments in the future is essential. The need is met by long-range planning.

The Chemical Industry Serves Many Industries

Along its history of growth, the chemical industry has added many industries to its customer list until it is now an important supplier to virtually all major industries.

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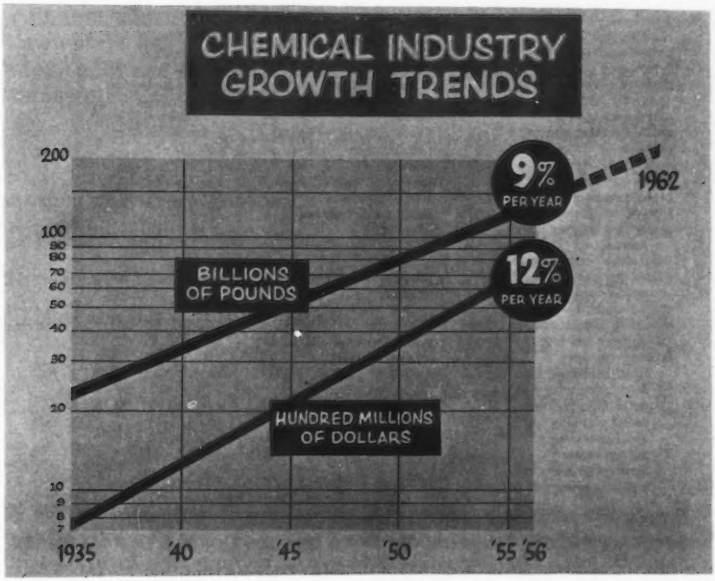

Figure 1

Through the channels shown in Table I the chemical industry supplies all major consumer needs. In a typical situation, such as the transportation field, the ultimate consumer is served by a major industry, the automobile manufacturer. The auto maker buys his components from a number of basic industries: steel, rubber, textiles, plastics processing, paints, and petroleum. Each of these is supplied by the chemical industry—in many cases with a variety of chemical products.

In planning to serve the transportation needs of the ultimate consumer, a chemical company has a challenging problem as indicated by Table II. Plans must not only take into account changes in consumer demand but also changes in the economic and technological situation of those industries who are between the chemical industry and the ultimate user.

TABLE I

These chemical products	Serve such industries as	For these consumer needs
plasticizers	agriculture	food
man-made fibers	food	clothing
fertilizers	construction	shelter
plastics & resins	transportation	communication
synthetic rubber	iron and steel	recreation
anti-knock agents	textile	health
surface-active agents	paper & allied products	transportation
solvents	printing & publishing	
dyes	lumber	
textile processing chem.	leather & leather goods	
paper processing chemicals	rubber products	
lube oil additives	furniture & fixtures	
pesticides & other agric. chems.	tobacco	
explosives—non-military	glass	
rubber processing chems.	plastic products	
automotive anti-freeze	mining	
gasoline additives	soap & synthetic detergents	
oil-producing chemicals	petroleum	
natural gas treating chems.	protective coatings	
others:	pharmaceutical	
leather chemicals		
food processing chems.		
petroleum refining		
metal cleaning		
steel processing		
refrigerants		
mineral processing		
water & sewage treatment		

TABLE II

CHEMICAL INDUSTRY SERVES THE TRANSPORTATION INDUSTRY

Chemicals Products	Serves These Industries	Serving Consumers' Transportation Needs
Processing Chemicals Dyes	Steel	Consumer
Synthetic Fibers	Textile	
Synthetic Rubber	Rubber Products	Transportation
Plastics and Resins	Paint, Varnish and Lacquer	
Pigments		(Including Equipment
Tanning Chemicals	Leather	
Anti-Knock Compounds	Petroleum	Industry)
Drilling Mud Additives		
Lubricating Oil Additives		
Automotive Anti-Freeze		

Chemical Processing – Its Complexities for Planning

Within the chemical industry, advances in chemical processing present a challenge to the long-range planning process as can be seen in Figure 2. Some processes are relatively simple from a planning standpoint.

An example is the conversion of natural gas to ammonia; a single chemical manufacturer is involved; he ships directly to the consumer—the farmer. Often, however, chemical manufacturing

is complex, as typified by nylon. For example, through a four- to six-step process, petroleum, coke oven light oil, corn cobs and oat hulls, natural gas hydrocarbons, or molasses can be used as the raw material for the first step. Not only are there alternate raw materials but also there are alternate production processes to adipic acid and hexanethylene diamine which are the intermediates used in the production of nylon salt.

CHEMICAL PROCESSING

Sometimes relatively simple:

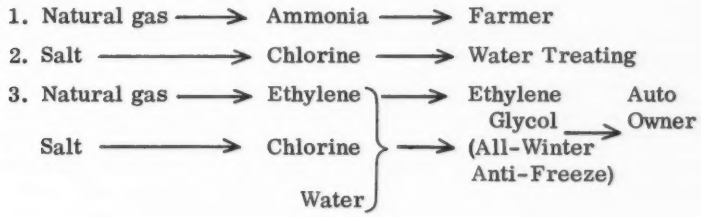

Figure 2

Here there are many manufacturing steps; a number of chemical companies are involved; and each has several long-term process alternatives. In this integrated production scheme each manufacturer must thus appraise not only his own long-term economics but also those of his suppliers and customers as well. Only then can he make his own long-term plans.

Increasing Competition

Much of the present emphasis on long-range planning in the chemical industry is stimulated by increasing competition. This competition multiplies the number of long-term variables with which the planner must cope. Competition is increasing between products, between processes, and between companies and requires planning by all departments—market research, sales, sales development, sales promotion, production, engineering, and research.

Competition Between Products. For many years synthetic chemical products competed primarily with natural or other nonchemical materials. But in recent years chemicals are competing with other chemicals as well as their long-term competitors. An interesting example is in the interior residential paint field.

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First, alkyd paint—a synthetic—was introduced to compete with the old standby, vegetable oil paint; then rubber-base paint—another synthetic—was offered and in 1950 there was competition between these three. Today, four types of synthetic resin paints—alkyd, rubber base, vinyl, and acrylic—are competing with oil paint—and with each other. The home handyman or professional painter is helped by this wide choice of products. Chemical companies, however, who must plan production facilities for the basic raw materials have a problem. They must estimate how demand will divide on these various products. In the paint situation, as in many others, there is rather meager information on which to base such an estimate. There are similar cases of strong and growing competition between products throughout the chemical field.

Competition Between Processes. Process research and development in the chemical field has generally resulted in a number of alternative ways of producing a single product. Typical cases involve such familiar chemical products as polyethylene and hydrogen peroxide.

TABLE III

Competition Between Processes	Number of Commercial Processes in use	
	1946	1956
Polyethylene	1	3
Phenol	3	4
Hydrogen Peroxide	3	4
Acetone	2	4
Phthalic Anhydride	1	2
Acrylonitrile	1	2

There are now three commercial methods of making polyethylene and four for producing hydrogen peroxide as indicated in Table III. Ten years ago there was but a single polyethylene process used commercially; three processes were used for hydrogen peroxide. In instances such as these in which new processes have been developed, other techniques are under investigation. It is an unusual commercial chemical which cannot be made by at least two economical methods. When planning expansion, the chemical manufacturer must weigh the long-range economics of

both new and established processes to insure that he will be competitive in the long-term. His process considerations must then be integrated with other aspects of his expansion project.

Competition Between Companies. The growth and diversity of the chemical industry has been a magnet to a number of companies, particularly those who have in some way been allied with it. The consequence has been a large number of new entries into the industry.

TABLE IV

Competition Between Companies	Number of Producers	
	1946	1956
Synthetic Ammonia	12	35
Benzene, Petroleum	--	12
Ethylene	3	10
Vinyl Chloride	4	8
Butadiene	3*	14
Chlorine	12	17

*Plus 7 U. S. Government Installations

Ammonia is indicative of the situation in many basic chemicals. In 1946 there were twelve producers of synthetic ammonia. Today, as shown in Table IV, there are thirty-five. Despite the great increase in the number of producers of ammonia and other heavy chemicals, additional new producers will be added within the next two or three years. Where there is such a large number of direct competitors, the profit outlook for some will normally be unsatisfactory. In many of these cases, new investments in these chemicals must be carefully scrutinized by planning teams.

Research. A final important characteristic of the chemical industry which requires decisions with long-range implications is that of product innovation. Its expenditures for basic research are the highest among U. S. industries by a wide margin (See Figure 3). Total expenditures for basic and applied research are also high and growing at a rapid rate.

According to U. S. Tariff Commission reports, synthetic organic chemicals research alone accounted for $300 million in 1955 and is expanding at the rate of 14 per cent. Other authorities indicate that total chemical research expenditures including the

inorganic and other industries allied to the chemical industry will be spending about $500 million (See Figure 4). A survey conducted by *CHEMICAL AND ENGINEERING NEWS,* indicated that the recent 14 per cent per year growth rate in research expenditures will continue at least for the next year or two.

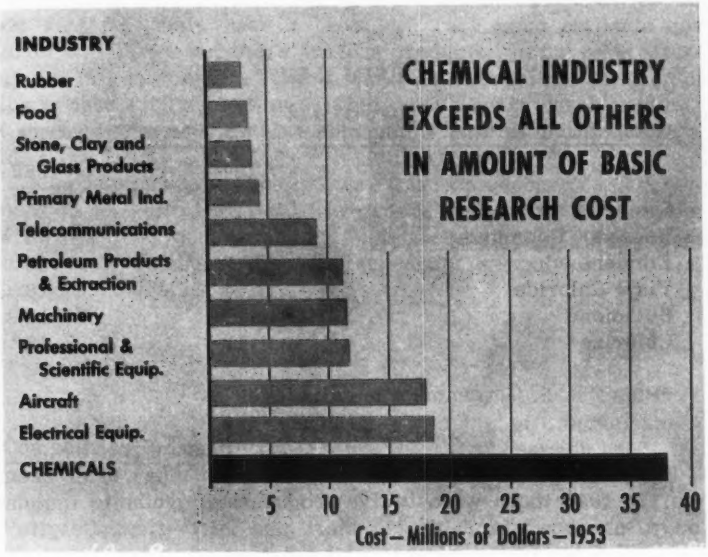

Figure 3

New Product Introduction - The results of the chemical industry's research expenditures are reflected in the high rate of new product introduction. (See Table V).

Each of these new chemical products represents not only a single preliminary success but perhaps a dozen or more failures—products which did not attain the commercial introduction stage. For each product, success or failure, it was necessary to take a long-range view of markets and of technology. The chances of long-term success could then be appraised for a program that might require 10 to 15 years or longer to reach commercialization.

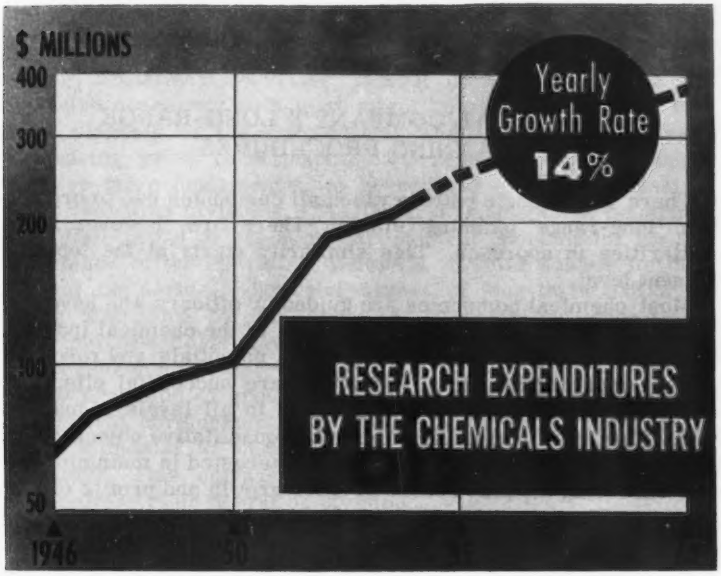

Figure 4

TABLE V

HIGH RATE OF NEW PRODUCT INTRODUCTION

Number of New Chemicals and Chemical Specialties Introduced

1942 -- 385	1947 -- 401	1952 -- 247
1943 -- 383	1948 -- 359	1953 -- 413
1944 -- 401	1949 -- 493	1954 -- 543
1945 -- 476	1950 -- 448	1955 -- 425
1946 -- 139	1951 -- 356	1956 -- 425

(Source *CHEMICAL WEEK*)

This review of the chemical industry's characteristics has shown some of the variables that will affect the future of any chemical product or chemical company. These variables indicate

why the chemical industry must do long-range planning; they also show some of the obstacles that these planners face. Now let's consider how companies in the chemical industry organize to plan their future.

A CHEMICAL COMPANY'S LONG-RANGE PLANNING PROCEDURES

There is no single pattern which all companies use to organize their long-range planning efforts. There are, however, some similarities in approach. This similarity starts at the top management level.

Most chemical companies are guided by officers who have faith in the U.S. economy and in the future of the chemical industry. They have confidence in the long-range potentials and resources of their own organization. Those who are successful effectively communicate this faith and confidence to all levels of management. They may not delineate specific, quantitative objectives but they let it be known that they are interested in maintaining or even exceeding the past record of sales growth and profits of their company. They organize their company to take aim on this basic objective.

Corporate Organization of a Chemical Company

The typical chemical company corporate organization is set up to insure adequate emphasis on long-range planning as shown in Figure 5.

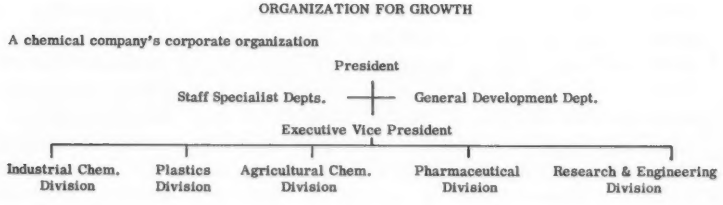

Figure 5

Each of the operating divisions shown must do their long-range planning within the scope of their operations. In addition, this organization plan includes the central research and engineering department, and the general development department, which are concerned with what might be called the "ultra" long-range planning of the corporation. The Central Research and Engineering group is responsible for research which is longer-range or more fundamental, or beyond the scope of that assigned to the operating divisions. The General Development Department is a staff group to assist management in coordinating the long-term plans of the operating divisions. Special studies for management on some fundamental aspect of long-term corporation growth are done by this group. Commercial consideration of entry into new fields may be another primary interest of the General Development group.

The provision of groups like central research and engineering and general development, reporting directly to top management, is a testimonial to chemical company emphasis on planning for the future. This emphasis is shown, too, in a typical organizational pattern of an operating division.

Operating Division Organization For Growth

The operating division of a chemical corporation is normally organized along functional lines. (Figure 6)

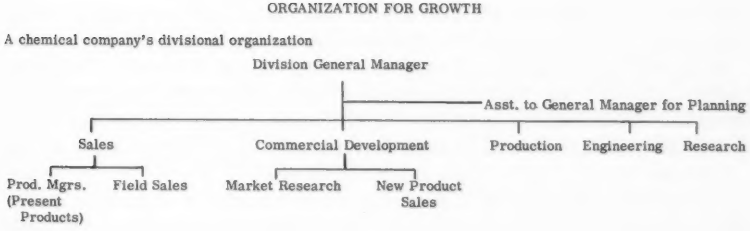

Figure 6

But, here, as in the corporate organization, the structure insures adequate emphasis on the long-term view. Three groups whose primary concern is the long-term development of the division report directly to division management. They are (1) the research department, (2) a planning staff, and, (3) the commercial development department. Of particular interest to marketing personnel is the presence of the commercial development group.

The commercial development department has responsibility for market research, sales development, and the evaluation of new business opportunities within the division's scope. An increasing number of chemical companies are establishing such a group as a primary function of their operating divisions. Much of the commercial development department's activity can be considered as a part of the marketing function. Close cooperation with the sales department is essential. By this group reporting directly to division management, it is insured that (1) new product programs are not subordinated to established products and (2) market research work is not overly conditioned by sales considerations.

Although commercial development and research are primarily directed toward the long-term expansion of the division, all functions must co-operate in the long-term planning process. In this process all groups of the corporation are involved.

The Planning Process

Having considered the basic organization of the chemical corporation, how do these organizational groups cooperate to produce long-range objectives and plans? To discuss this process properly, we must break long-range planning down into its several elements. These elements are frequently considered to be: product planning, facilities planning, organizational planning, and financial planning. In the chemical industry, we can consider that product planning is the common denominator of these planning elements. Product objectives must be at least tentatively determined before long-range programs can be outlined for facilities, personnel, or to meet financial needs. Product programs may require modification because of facilities, personnel or financial considerations. But the primary foundation for all long-range planning is sales and profit potential by product.

Product Planning in the chemical industry we can sub-divide the product planning activity for any company division into three areas: Present products, new products, research products. Plans for each of these groups must be made by different planning teams and the results integrated by divisional management into a product

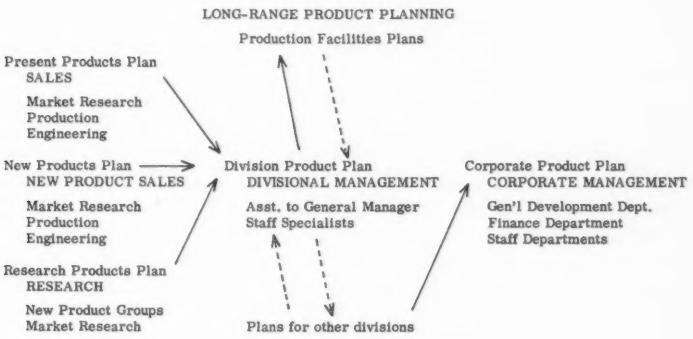

Figure 7

plan for the division as shown in Figure 7. In the planning of each of these three categories of products, the procedure will vary in some practically significant respects.

The sales department has the initiative for developing a product plan for *present products*. Market research, production, and engineering groups have important responsibilities in the planning procedure. The sales group integrates the forward thinking of each. A plan is evolved based on this information: From the market research department—an evaluation of long-term growth and expected industry supply, demand and price characteristics for this product. From production—a long-term estimate of the capacity and costs of production of present facilities at given operating rates. From engineering—cost information for new facilities corresponding to that obtained from production for existing facilities. From within the sales organization—estimates of the company's market share opportunities for major customers and in major markets. From company records—sales, cost, and profit history and past competitive performance record on this product. And, from all groups—an appraisal of competitive strengths and weaknesses.

The *new products sales* group is responsible for developing the product plan for materials which have passed the research stage but are not yet into full commercial production. The information required for this planning is similar to that for present products. The hazards of prediction for individual products are obviously

greater and the forecasting job more demanding. These products, however, are vital to long-term development of the operating division. Considerable effort must be expended to develop a long-term plan which is helpful not only to the new product program but also to the proper development of the division as a whole.

The direct responsibility for planning *research products* is moved from the marketing area and rests with the research department itself. Market research and new products sales groups must erect some important road signs for research to follow. Analysis of long-term industry and consumer problems and needs are essential guides. These can in large measure be more effectively determined and evaluated by these marketing groups than they can within the research department itself. Thus, we see in this product area close cooperation between laboratory research and the marketing function. The final decision for the program to be recommended to management rests with the research management.

Integrating Divisional Product Plans. Divisional management has the exacting job of integrating the various elements of the division's plans. This integration process requires (1) combining and reconciling the three categories of product plans, and, (2) melding the product plans with facilities, organizational, and financial programs. When completed, the plans recommended by division management become the basis for planning at the corporate level.

Corporate Plans. By combining division plans, top management develops a corporation plan through a procedure of review and adjustment. Among the accomplishments of this top management integration process are:

The sum of division plans indicates over-all corporation expansion potential within the present scope of operations. This can be compared with past corporation sales and profit performance and other broad measures of progress.

The combined plans point up any inconsistencies among the basic objectives of the different operating divisions.

The need for upward or downward revision in the objectives and programs of individual divisions is revealed.

A basis is provided for comparing new corporate business opportunities outside of the scope of division plans with the potentials for the divisions. The possibilities of merger, acquisition, patent purchase or basic new research can be considered in terms of their relation to long-term divisional programs and problems.

Following the review, adjustment and final approval of division

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plans by top management, the major segments of the corporation have, in the long-range plan, a fundamental guide for future action.

In summary, several conclusions can be drawn relating to long-range planning in the chemical industry.

The need for careful long-range planning has increased greatly in recent years because of the size and growth of the industry, the increasing complexity of chemical processing, the greatly intensified competition of all types and the continuing emphasis on laboratory research.

These characteristics, which force greater attention to planning, also make planning more difficult and require increased analysis of alternate courses of action.

Long-range planning is not something that can be done by top management alone nor can most of it be left to those members of management closest to specific product programs. All levels of management and all major functions of the business must work at the job of long-range planning.

Certain groups, such as market research, new product sales, laboratory research, and long-range planning staffs must be assigned to specialize in the long-range planning and development of the company. These groups who have few day-to-day responsibilities in the organization can insure adequate emphasis on the long-range view.

Formal long-range planning has become a primary function in the chemical business. It has proved an indispensible guide to decision-making and short-term action. It is a stimulus to progress.

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CENTRALIZED VS. DECENTRALIZED ORGANIZATION FOR MARKETING RESEARCH IN CHEMICAL FIRMS

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The Dow Chemical Company

THE location of a Market Research Department within the company organization structure is a problem that receives considerable thought in chemical firms and probably within companies in other industries. Decentralizing market research is more of a problem to medium-sized or large companies, since smaller companies by the nature of their product line and organization usually have one centrally located market research activity. As a company grows, with an expanding and diversified product line and more extensive organization, management and managers of Market Research are forced to consider the kind of market research effort that will be needed to efficiently service a growing organization. This usually means some degree of decentralization.

Now having indicated that this problem gets a lot of thought, I should like to state my belief that centralized effort vs. decentralized organization is not nearly as important to effective market research as a close working relationship with a segment of management that needs the research, understands its value and limitations, and is in the position to do something about the results. In listening to the comments and gripes of market research

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Author's Note: This is a summary of the main topics presented under the above title. The subject was presented informally and developed through discussion with the participants.

people from different companies and industries, I am impressed that many of the more serious complaints have more to do with operating procedures and relations with management than with matters concerning centralization or decentralization. These complaints are symptoms of something wrong, perhaps within the Market Research Department, but also of its acceptance and use. There are undoubtedly segments of management in various levels of a company's organization that meet these criteria of need, understanding, and ability to secure action, but a Market Research Department should consider itself fortunate to be linked to such a group whether its location is central or dispersed in divisions, regions, product groups, or other units.

From surveys made by the National Industrial Conference Board, American Management Association, American Marketing Association and from general observations, the following broad conclusions on market research organization can be made: When a company sells a number of related products, or where there is no decentralization of administrative or sales responsibility it is generally served by a single centralized Market Research Department. Conversely, when a company's product line is extensive and highly diversified and where responsibility for total operations is decentralized into fairly autonomous units it is common to locate Market Research Departments within most of these units. Examples of the latter situation can be found among the largest United States corporations.

Decentralization is not always quite so clear cut and can occur in lesser degree to meet individual company's needs. Single centralized research departments with sections or groups of specialists assigned to different product sections; this is a very limited type of decentralization. Central department with branch groups located in product sections or regional division. And, separate research departments serving divisions under guidance of a centralized department or staff research director.

(Examples of Market Research organizations in several chemical companies were presented and discussed. These examples included: Du pont Company, Union Carbide Corporation, Monsanto Chemical Company, and The Dow Chemical Company.)

Market research at The Dow Chemical Company is organized as a centralized department serving the various activities of the company. It has been our experience that centralized market research has resulted in the following advantages:

It is more economical and results in more effective and flexible use of personnel.

Broadens the abilities of men—improvement in techniques.

Better communication through regular meetings and close association of analysts.

Further utilization of research results—on a company-wide basis.

Whole department works for the company's interest—not just one division.

Less confusion in contacting consumers. Less duplication of effort.

More continuity of research.

Gives Market Research Department greater stature within company.

Better coordination of over-all sales policy and market research activity.

Ability to secure better people and provides better training of people both within the department and for other work. Provides a pool of replacement.

Ability to secure specialized services which can be economically utilized.

There are some disadvantages—"something is always sacrificed." The following are examples: Less intimate relationship with "research customers." Certain product groups may require very specialized research people; "our problems are different." And harder to measure or appraise accomplishments.

On balance, and for this stage in development, centralized market research enables us to operate more effectively and better serve the needs of the company.

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DE-FOGGING THE CRYSTAL BALL

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University of Notre Dame

ALL forecasting is subject to error ard it is better to be aware of this error and to estimate its magnitude rather than to ignore it. The demonstration of error marks an advanced stage in any science. One should not equate the ignorance of error with the lack of it.

Most discussions of sales forecasting acknowledge that errors are possible. However, the bulk of such discussion is concerned with how to make a forecast and not with the accuracy of the forecasts which may be obtained. That is, prospective forecasters are told how to do it but not what to expect in the way of accuracy.

The purpose of this paper is to clear away some of the "fog" which surrounds our sales forecasting crystal ball. The analysis is primarily concerned with the accuracy of techniques used for forecasting sales of new grocery products. However, in order to gain some perspective, the accuracy of some aggregate forecasts is investigated first. New product sales forecasting is generally acknowledged to be less accurate than forecasting for national aggregates. Thus, the accuracy of the aggregate forecasts should provide some standard for comparison.

The evaluation of aggregate forecasts depends entirely upon existing literature and a review of it suggests that an over-all forecast will probably have a range of error of at least ten to twenty per cent. Estimates for components apparently have wider ranges of error, perhaps exceeding fifty per cent! With this standard, new product sales forecasting techniques and their accuracy were investigated.

There is little published literature on the evaluation of new

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grocery product sales forecasts. Therefore, this study relied on many case studies supplied by several food manufacturers. The specific cases analyzed were not intended to represent examples of either "good" or "bad" applied research, but rather a sampling of the research actually conducted by companies and advertising agencies in the normal course of business. It was assumed that the researchers involved were at least "average" and therefore the cases represented a sampling of "at least average" research being done in the area. The general techniques evaluated were: executive judgment, consumer surveys (both large and small sample), analysis of delivery data, store audits and consumer panels.

Using only executive judgment, the estimate in one case was two hundred per cent above actual sales whereas two other estimates were between five and ten per cent of actual sales. Considering only the latter two cases, it appears that this approach may yield reasonably accurate forecasts. However, it would appear even more likely that estimates derived in this way would be subject to a wide range of error. This is likely because the executive judgment approach is the typical approach used for new product forecasts and the high failure rate—four out of five—on new products does not engender much confidence in this method.[1] The generally unreliable results obtained with this method have led many companies to seek much more objective and hopefully more accurate methods. Most of these are refinements or adaptions of the general approaches listed above.

As might have been expected, pre-market test surveys were less accurate than post-market test research. In the pre-test surveys analyzed, actual sales were from thirty per cent to eighty-seven per cent below estimated sales. Actually, all of the estimates using the various techniques (in 35 cases) were higher than actual sales a year after the product had gained wide-spread distribution.

Most of the cases studied were concerned with the evaluation of the results of market tests. The use of delivery data was not very helpful because the distribution channels were filling. Surveys appear to be considerably more useful as a basis for forecasting sales. A range of error from zero to fifty per cent was noted in several cases. In the cases observed, consumer panels were not very useful. This was mainly due to the researchers'

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1. *A Survey of Two Hundred Leading Packaged Goods Manufacturers,* Ross Federal Research Corporation, New York, 1954.

succumbing to many of the dangers of faulty panel design and operation which have been described in many places. National panels were too slow in reliably reflecting regional sales because of the nature of the sample. Two cases using store audits yielded errors of thirteen and fifty per cent.

As predicted, new product sales forecasting techniques are not as accurate as forecasts for national aggregates. In contrast with the range of error of ten to twenty per cent for national aggregates, a range of error of zero to eighty-seven per cent was observed for new grocery products. A large part of this error is undoubtedly due to the fact that judgment must be used in designing and also interpreting the research studies. Some researchers may be more skillful (or luckier) than others. However, research users must take into consideration the "average" accuracy of the "average" researcher. Therefore, it would seem that users of new product sales forecasts must accept the fact that any estimate is accurate only within some unspecified range of error (perhaps zero to eighty-seven per cent!)

During the analysis of the cases it became obvious that an implicit assumption was being made concerning consumer behavior toward new products. It was assumed that there was an underlying causal system which could be used as the basis for projecting survey or market test results to the regional or national level. However, Cunningham found no relation between socio-economic characteristics and brand loyalty.[2] If there were no such causal system for new products then there would be little or no basis for projecting results, as was done by the researchers in the observed cases. If this were true, the wide range of error would be more understandable.

Comparison of a company's sales data for seventeen products in thirty-three territories with Sales Management's estimates for population, families, urban population, effective buying income, food sales, and the Buying Power Index, indicated extremely erratic buying behavior. Although there was fairly close correspondence among the control characteristics, in some cases one product would sell over 100 per cent more than another similar product in a territory. The smaller territories were more variable than the larger ones, thus suggesting some kind of chance behavior which cancelled out as the territories became larger.

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2. Ross M. Cunningham, "Brand Loyalty - What, Where, How Much?" *Harvard Business Review*, January-February, 1956, pp. 116-128.

More detailed analysis of the data seemed to indicate that once a territory attained a certain minimum income level, then the sales in that territory were independent of income. This conclusion lends support to the argument which has been advanced by many writers in the last several years to the effect that the U. S. market is fast becoming a homogeneous middleclass market.[3] Some sociologists and psychologists have been analyzing consumer behavior with little concern for socio-economic characteristics. Thus, perhaps the idea of a causal system based on socio-economic characteristics should be abandoned.

Giving up the idea of a causal system in favor of a chance system, or one in which the extent of distribution were completely determining, would require a drastic revision in marketing research technique for new product sales forecasting. This, of course, should be done if necessary, but before it is, an empirical check should be run on the theoretical arguments advanced by the sociologists, psychologists, and some economists.

Data from the Chicago Tribune Consumer Panel for three new grocery products (Dove Soap, Imperial Margarine, and Fluffo Shortening) were used for such an analysis. Six socio-economic characteristics (race, family size, family income, education of family head, occupation of head, and age of head) were compared for buyers and non-buyers for each of the three products. Chi-square analysis was used to test the hypothesis that there was no significant difference between buyers and non-buyers on the basis of socio-economic characteristics. The tests showed that there were significant relationships between several of the characteristics and the purchase of each of the new grocery products. However, there was no one set of characteristics which applied to all three products.

The above analysis would seem to suggest that a causal system is operating, and therefore there is some basis for projecting surveys or market tests. However, the basis does not seem to be fixed, and therefore continual use of one characteristic would not appear to be too dependable. Perhaps some system of cross-classification of socio-economic characteristics should be used. The characteristics to be used for each new product might be different, depending upon the nature of the product and the expected consumer reaction, and also pre-test research. Also, it would

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3. "The Changing American Market," in G. H. Brown, Editor, *Readings in Marketing from Fortune*, Henry Holt and Company, New York, 1955.

seem desirable to give more thorough consideration to the effect of wholesalers and retailers in the distribution channel. There are so many new grocery products being introduced, that even if the product would be preferred by the consumer it might never be presented for selection.

Inasmuch as each new product seems to have its own acceptance pattern, reliance on executive judgment or the utilization of past experience with other products does not appear too promising. Marketing research must be used. However, the present techniques must be improved considerably before new product sales forecasting becomes "a science." This will not come about by indiscriminately trying any new technique which looks promising. The new techniques ought to be tried certainly, but they also ought to be *evaluated*. It seems inevitable that forecasts developed on the basis of marketing research techniques will have a range of error. The crucial point is how wide this range will be in actual practice. It is the evaluation of new techniques (not just experimentation) which will de-fog the crystal ball.

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SALES POTENTIALS AND THEIR USE IN TEST MARKETING

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IN marketing management the problem of control is significant in two fundamental respects. First, there is the need for direct control, or the exercise of directing and restraining power over any marketing organization. Second, there is the need to recognize and account for the influence of factors which are beyond the direct control of management. Consequently, control in this second sense is indirect. The importance of this distinction rises from a realization that the marketing organization is not the sole determinant of the results obtained by that marketing organization. There are outside factors over which the marketing manager cannot exercise directing or restraining power but which have an important influence over the effectiveness of the marketing organization. Indirect control can be exercised by using one or a combination of two methods. These two methods of gaining indirect control are statistical control and control through imputation. Statistical control is achieved through randomization of outside influences. Control through imputation is attained through measuring and adjusting for the influence that outside factors exert upon marketing results. This paper deals with some aspects of the use of sales potentials in an attempt to gain this second type of indirect control in marketing.

The sales potential is a measure of industry sales possibilities in a specific geographic area expressed as a relative component of the sales possibilities in the total area or total market. In an industry in which selling efforts have been apportioned among market components in proportion to sales possibilities, the sales

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potential of an area is equal to industry sales in that area divided by industry sales in the total area. This relative apportionment of industry selling effort is thought to be important because of the probable residual effect of past industry selling efforts upon the market today. In addition, of course, the geographic apportionment of present industry selling efforts has an important effect upon the relative geographic distribution of sales.

In those instances in which industry selling efforts have *not* been apportioned in proportion to sales possibilities, the sales potentials of component areas of the total market can be obtained through statistical methods, one of which is multivariate analysis. The purpose of the use of this statistical method is to weight and combine the influence of relevant variables that are not controlled by the individual firm. If relevant variables that are not directly controllable by the marketing organization are properly assessed, the sales potentials indicate the relative sales possibilities among components of the total market, even though industry selling efforts have not been apportioned among the component parts in proportion to sales possibilities.

For a detailed analysis of the concept of sales potentials, one might turn to the use of economic models. This approach is being used in the over-all research project of which this paper is a part. However, the purpose in this report is to indicate some possible uses of sales potentials as a control device. Since the area of test marketing offers a unifying theme for some aspects of application of sales potentials, it is used for illustrative purposes.

Sales potentials are useful in the solution of at least three problems connected with a test marketing project. These are (1) selection of test markets, (2) apportionment of sales efforts during the test, and (3) evaluation of the test results. Although these problems must be considered jointly in the planning stage of a test marketing project, examination of each problem in isolation facilitates description of the role of sales potentials in its solution.

Sales potentials can be useful for both nonprobability selection and probability selection of test markets. In instances of nonprobability selection, an expression of the relative sales possibility size of test areas can improve selection. Sales potentials are an expression of relative size of the test areas as markets for the product involved in the test and thus, can be used as a basis for nonprobability selection. Particularly is this desirable in those cases in which the test involves a comparison of differing levels of marketing efforts among areas.

Probability selection of test markets may indicate a need for

an expression of sales potentials. That is, *if* each test area is to be assured a probability of selection in proportion to its importance as a market for the particular product in the test, a sound expression of relative importance of the areas is needed. For some products population may provide an adequate expression of this relative importance. However, in those cases in which the sales of the product involved in the test are determined to any substantial degree by factors other than population, these factors must be included in stating the relative size of the markets for the product. If the sole determinant of sales was population, relative population figures would be the expression of sales potentials.

Stratification of market areas may be especially desirable if the relationship between sales and sales potentials is not linear, even though marketing efforts are apportioned in proportion to sales possibilities. That is, if sales of the product for one per cent of potential appear to vary with the sales potential size of the market area, it may be desirable to stratify test areas according to their potential. In addition, it appears that for some products the sales which can be attributed to a given amount of efforts per one per cent of potential may be partially dependent upon the market share that the product has enjoyed prior to the test. In this event, it may be desirable for selection purposes to stratify or substratify market areas by market share.

Following the selection of the areas in which the test is to be conducted, including control areas, the relative efforts to be put forth in each must be determined. This problem is present whether the purpose of the test is to evaluate levels of selling efforts, types of selling efforts, or some other factor. Generally, where it is *not* the purpose of the test to evaluate levels of efforts, the efforts to be put forth during the test should be apportioned in proportion to sales potentials where market share is approximately equal. That is, in those areas in which the product with which the test deals is in about the same relative competitive situation, the efforts should be allocated among the test areas in such a manner that application of efforts per potential per cent is everywhere equal. A given quantity and composition of selling effort per one per cent of potential applied to each of two areas may result in widely different effects, because the relationship between efforts and results may be dependent upon the competitive position of the product, and this competitive position may not be the same in the various test markets. It is in this connection that stratification or substratification by market share may prove of value in the selection process.

If the purpose of the test is to determine the effects of differing levels of efforts, the application is only slightly different. The problem of market share is essentially the same, but efforts are applied differently. If two levels of selling efforts are to be tested, number two being just double number one, the total quantity of efforts to be expended in area one (testing level one) should be half the total quantity of efforts to be expended in area two (testing level two) *only* if the two areas are equal in size as markets for the product in the test. The general statement for determining efforts to be allocated to the various test areas is that the desired ratios between the desired levels of selling efforts should be used to set the ratios between the efforts allocated to the test areas per potential per cent. That is, if the efforts to be tested are desired to be in the ratio of one to two, the efforts per potential per cent to be expended during the test should be in the ratio of one to two. In absence of apportionment of this nature the buying units in the respective areas do not receive the proper quantity of efforts.

Attempts to select properly the test areas and to apply selling efforts in proper proportion are made in order that the test results can be evaluated meaningfully. In event the test areas were selected on a nonprobability basis, the results must be interpreted without statistical measures of reliability. However, the objectivity of the evaluation and the dependability of inferences to the total market likely are improved when sales potentials are used as a basis for evaluation and interpretation. The results should be expressed in terms of results per one potential per cent. Inference to the total market is facilitated as compared with a situation in which the relative importance of the test area as a market for the product in the test is not known. Increased precision in the statement of relative market size, with regard to the specific product involved, enables increased precision in inferences to the total market.

Use of a sound statement of test area size as a market for the product of the test is useful for statistical interpretation. In instances in which statistical measures of reliability are used, expression of sales potential size can be used to reduce the size of the error. That is, indirect control over variation in test area sales possibility size can be gained by expressing sales in relation to sales potential size of the test areas. In this manner, that portion of the variance in sales due to differing sales possibilities among test areas can be removed. Consequently, for a given level of confidence and reliability, the number of test areas used in each group can be reduced.

It seems appropriate to emphasize that the use of sales potentials is not limited to test marketing. Just as selling efforts can be allocated geographically during tests by using sales potentials, selling efforts can be allocated by this method as a normal part of management of the selling function. Test result evaluation based upon a statement of potentials illustrates a method which can be applied as a base for the evaluation of any selling efforts, whether in a test or merely as a part of usual functioning of the marketing organization.

In conclusion, whenever it is desired to evaluate the effects of a particular effort, other factors must be controlled. Whether the particular effort is one factor or a combination of factors, those not being evaluated must be controlled. The use of sales potentials offers a method of indirect control of some of the outside factors, the number being dependent upon the adequacy of the sales potential expression. Direct control of a few variables is possible, but direct control in the case of many factors is not practicable. It is in this respect that the sales potential and its aid in indirect control can be of great usefulness.

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NEW TECHNIQUES IN MARKETING RESEARCH

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IT is generally recognized that Marketing Research, at the present time, has emerged from the pioneering stage, and has become a useful and widely-used instrument for the marketer. As a result of its coming of age, new developments in this field have shifted in emphasis from "How to do it" to, first, how to do things better and more efficiently, and, second, how to be more productive with the instrument which has been developed. In performing the operations of a marketing survey more efficiently, I should like to mention new techniques in sampling and in the collection of basic data. In connection with increasing the productivity of the survey method, I should like to describe some new techniques which make possible more fruitful analyses of data.

The use of probability sampling in surveys is almost universally accepted today. One form of probability sampling is known as Area Sampling. In conducting large-scale consumer surveys, the sample of the population is taken by selecting a sample of small areas and interviewing people within these areas. Hence, the name, Area Sampling. Because of its wide-spread use, there has been a tendency to regard it as the only type of probability sampling available when one is required to estimate some characteristic of the total population.

About a year ago, a new type of probability sampling was developed by our organization in cooperation with the Research Department of the New York Stock Exchange. The specific problem

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which led to this development arose in estimating the number of persons in the United States who own stock in companies listed on the New York Stock Exchange. It was believed that approximately 8 million adults were in this category, and in order to measure trends of ownership, it was necessary to estimate this figure within 200,000 at a two sigma level. If a field survey were conducted, using Area Sampling, about 150,000 interviews would be required, at a cost of about $1,000,000.

Upon investigating other approaches to the problem, we found that each company listed on the Exchange had a record of the names and addresses of all of its shareholders. Each year the numbers of stockholders in all companies are compiled and a grand total is obtained. This total is not the same as the number of people who own stock, since many people own more than one issue and their names are duplicated. If the number of issues held by the average stockholder could be obtained, then it would be possible to estimate individual shareholders by dividing the average into the total stockholders of record for all listed companies.

The following procedure was used to obtain this average estimate. The alphabet of names was divided into 1,000 approximately equal segments. We could have used the Manhattan Telephone Directory or any other source. However, we obtained a more efficient sample by going to one of the leading companies which had a large number of stockholders. We went through their names and created 1,000 segments, 10 of which were selected at random. For example, the first segment in the sample included all names from Robert Ayers up to but not including John Babcock, which was the first name of the next segment. Each listed company was given the same ten sample segments and was requested to submit to the New York Stock Exchange, all names within the designated segments. These names were then sorted out and collated, and the average number of issues held per name was determined. Since 10 independent samples were used, it was possible to break down the final estimate into ten different estimates and thus make it possible to obtain a measure of the sampling error.

The above procedure has many uses in Marketing Research. For example, suppose you are a user of direct mail. Lists are available from several sources. In determining how many different lists to use, it is important to determine the extent of duplications among lists. All you need do is to obtain samples of all names within selected alphabetic segments from each list house under consideration.

Another application might be in the selection of trade publications for advertising, where it is necessary to know the extent of

duplication among subscribers (as well as the total coverage of a group of magazines). Publishers, while reluctant to release their entire subscription lists, will often release designated samples of names. From these samples, reliable estimates may be obtained. In this connection, and in some cases of direct mail, it should be pointed out that it is not necessary to adhere to an alphabetic arrangement of names. An arrangement by mailing addresses or postal zone works just as well. However, if postal zones are used as segments, a great deal of geographic variation among segments is present and it is recommended that more than 10 segments be used.

THE COLLECTION OF DATA

In addition to developing new techniques designed to increase the efficiency in sampling, there has been some work designed to increase the efficiency of some of the other phases of the survey operation. This work has been in the direction of replacing human beings by mechanical or electrical machines. The use of the punch card system is commonplace. Electronic computers are being developed for tabulating surveys. Plans are being made for the entire compilation of the Census in 1960 by automatic methods, after a photograph is taken of the completed questionnaire the enumerators turn in. I would now like to discuss briefly, the application of automatic photography to the collection of data.

One technique of data collection is the observational method. Interviewers are stationed at different locations and may be instructed to make traffic counts. The counts may be used to determine the number of people passing a certain store, or a certain corner; or they may be used to determine how many can see an outdoor poster within a given time period. The difficulty in using human observers are (1) at times when traffic is heavy, it is impossible to make an accurate count, (2) the human observer is troubled by fatigue, (3) the cost is expensive and (4) no direct evidence is available to check the accuracy of the count.

Recognizing these difficulties, a new method of observation was developed which had its first application in the count of the audiences of outdoor posters. This technique makes use of a camera with timing devices for automatic picture-taking. Before seeing how the camera is used, let us examine some of the basic theory. The principle was established, which stated that the number of people who can see a poster, are the people whose eyes can be seen by the poster. (See Figure 1) A motion picture camera may be placed on the poster; pictures can be taken; and

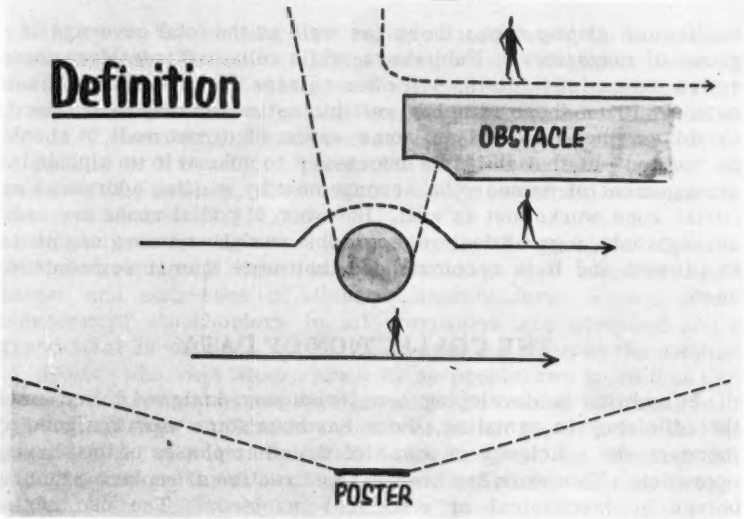

Figure 1

the number of people who come into view can be determined. This method, however, is extremely expensive. So, in the same manner that we can sample individuals in space, we can also sample in time. (See Figure 2) The hour, or the day, or any other time interval can be subdivided into small sample units and observations made within a selection of sampling units. Now we can sample a month by selecting hours, and then subsample the hour by selecting a sample of half-minute durations. The next step is to determine how many people come into view in the selected durations of one-half minute. Here is where the camera is used and it is not necessary to take motion pictures. All that is necessary is to take 11 snapshots timed at three-second intervals.

Thus, the basic procedure involved to measure the audience of an outdoor poster, say, for a period of one month, is first to mount a camera on the poster; select the sample of hours and then half-minute durations within the hours; set the timing device and have 11 snapshots taken for every sample duration. After the pictures have been developed, it is a simple matter to count how many people have come into view. This count is multiplied by appropriate factors to obtain the total audience.

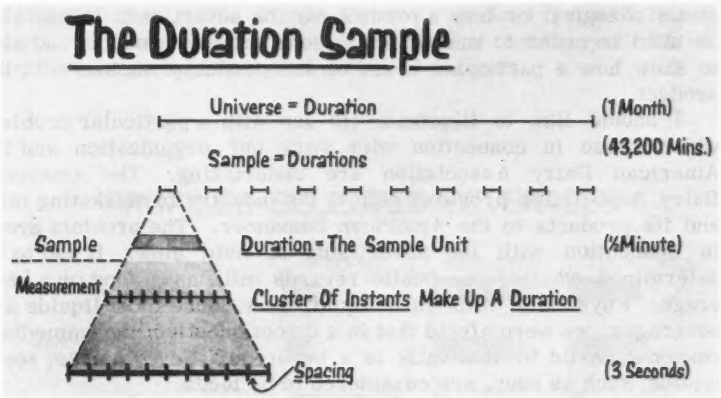

Figure 2

THE ANALYSIS OF DATA

The techniques of sampling and data collection in marketing surveys, relate to the development of the survey as a tool. Once the tool has been developed, progress tends to be in the direction of the efficient utilization of the tool. Not only have there been developments in the techniques of questioning, but also in the combination of questioning and sampling.

Recently, there has been a great deal of use of what is known as Profile, or Image analysis. In its simplest form, the interviewer merely asks the respondent to indicate whether or not he associates a product or a brand with a series of words or phrases, describing some of the product's real or imputed properties. The procedure is, essentially, one of asking a respondent to describe the product, but in terms of controlled ideas, which the respondent can either accept or reject. The advantage of this procedure over the pure depth or probing interview, is that the researcher can select the frame or frames of reference that are to be used.

After the interviews have been conducted, the percentage of acceptance for each word or phrase is computed. When all of the percentages have been assembled, a Profile of the product is obtained.

Profile analysis has important applications in Marketing Research. For example, a profile of a product may be used by itself in order to determine how a particular brand may be changed if it

needs changing, or how a product may be advertised. It may also be used in order to make comparisons between products and also to show how a particular brand or sub-product coincides with the product.

I should like to illustrate its use with a particular problem which arose in connection with work our organization and the American Dairy Association are undertaking. The American Dairy Association provides help to the industry in marketing milk and its products to the American consumer. The problem arose in connection with the advertising of fluid milk. It had to be determined whether the public regards milk as a food or a beverage. Physically, milk is a liquid. Now, since most liquids are beverages, we were afraid that in a direct question, the immediate response would be that milk is a beverage. Nevertheless, some liquids, such as soup, are considered to be foods.

The approach used was as follows: The respondent was presented with a card listing such words as "stimulating," "nourishing," "thirst-quenching," etc. Six different phrases were used. The respondent was then asked to tell the interviewer, which of these he associated with "food" and then which he associated with "beverages." (See Figure 3) With the same card in his hand, he was asked to associate the words with coffee, milk, soft drinks,

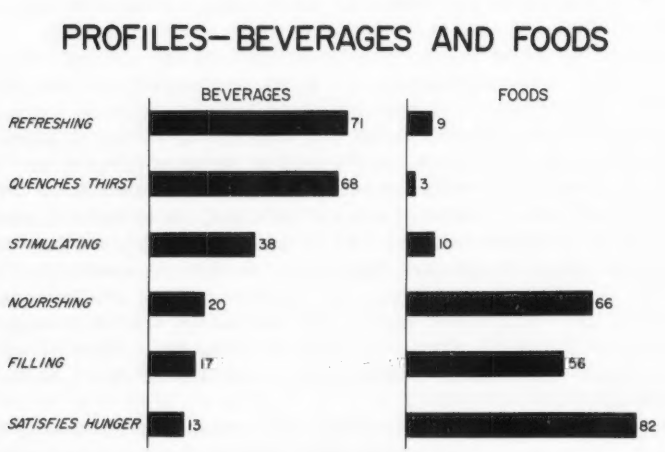

Figure 3

and fruit juices. (See Figure 4). It is obvious that milk fits the profile of "food" better than the profile of "beverage." This is just one simple application of a Profile analysis.

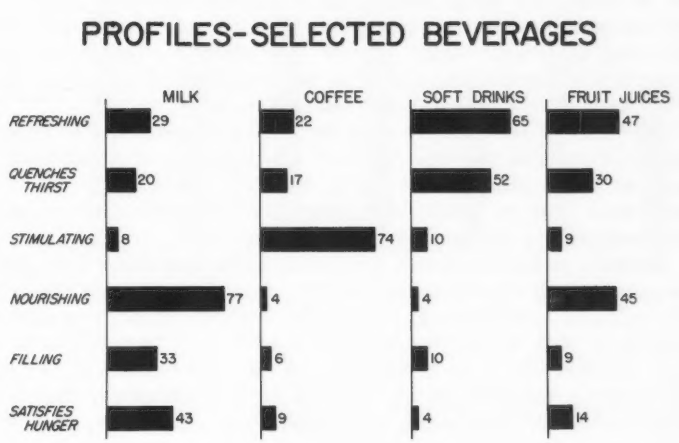

Figure 4

The next type of analysis involves a consideration of the joint interplay of questionnaire and sampling. Suppose a probability sample of 5,000 individuals is selected and numbered sequentially. If we now split this sample into two parts, sample A consisting of the odd number individuals and sample B consisting of the even numbered individuals, we obtain "interpenetrating" or "split" samples. The two samples, A and B are statistically identical. Now it is possible to use two questionnaire forms, identical on some questions but differing on other questions.

The use of split samples is extremely productive in surveys. It allows the researcher to achieve great flexibility in using different sample sizes within the frame-work of the basic sample. Some questions may require a large sample so that the responses be statistically stable. Other questions, however, may be used with a half-sample. For example, suppose we were interested in studying the market characteristics of a leading brand of dentifrice. In determining the distribution by age and income group,

it is necessary first, to determine the usage of this brand for all individuals in the sample. It is then necessary to determine age and income characteristics for the entire sample. This is because some age and income groups in the population are relatively small, and in order to attain reliable estimates, a large sample is required. Suppose, now, we are interested in estimating the incidence of usage among those people who have looked into *Life* magazine within the past three months, and also among those who own television sets. These two characteristics are quite large in the population, and it is not necessary that each of these two questions be carried in the entire sample.

One half of the sample may be used to determine the readership of *Life*, and the other half of the sample may be used to determine those households which own television sets. We have, thus, been able to reduce the length of the questionnaire and the time required to complete an average interview.

Besides making possible flexibility in sample sizes for various questions, split samples may be used for pairs of questions which are mutually conditioning. A recent occasion of this use arose in connection with a study undertaken for du Pont, in order to determine whether there is a market and how the market can be promoted for a transparent plastic bag for dry-cleaners. Most dry-cleaners return garments in a paper bag. However, nowadays, there are a few who use the polyethylene bag. A consumer survey was undertaken and in the course of the interviewing, consumers who received the last garment from the dry-cleaner in each of these two containers were identified. A 50-50 split sample was used. On one half of the sample a check list was used, which enumerated various properties of a garment bag, such as, gives protection in all kinds of weather, may be re-used, etc. Respondents in this half of the sample were asked "Which of these qualities do you think a garment bag should have?" With the other half sample, respondents were asked "Which of these qualities did the garment bag you last received have?" A comparison between the two sets of answers among these consumers who had their garment returned in a paper bag is shown in Figure 5. The differences between the heights of the bars in each pair indicate the deficiency of the paper bag. It was believed that a transparent plastic bag would make up these deficiencies.

Fortunately, the sample unearthed some people who received their garments in a plastic bag. The sample was large enough to make a further analysis. The comparison of the two half-samples is shown in Figure 6. You will note that the discrepancies have been made up and also that the heights of the "should have" bars

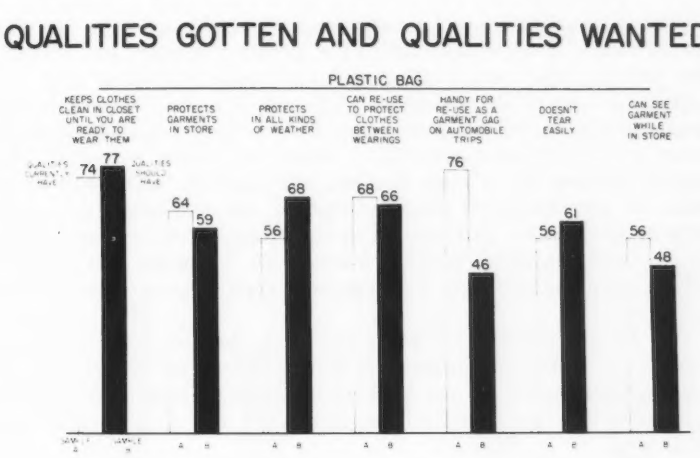

Figure 5

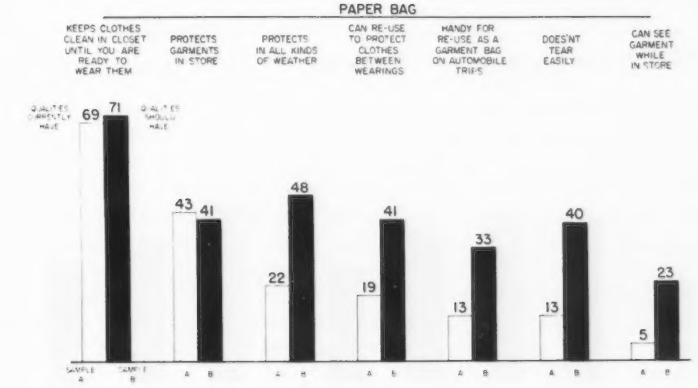

Figure 6

in the case of the plastic bag are higher than the paper bag users. The former group has learned to expect more from a garment bag.

The classification of respondents in a survey has, for many years, been considered as one of the standard operations. Usually, one obtains age, sex, income, socio-economic status, city size, region, and other demographic characteristics. These data have been used to define present markets in order to indicate possible future markets and to provide a basis for media selection. Recently, methods have been developed to classify individuals on the basis of psychological characteristics. In our organization, we have experimented with two such variables. The first is cautious versus venturesome, and the second is communicative versus non-communicative. Art Kapenen will report later on many other variables.

We have found that for some products, the users of the various brands are alike with respect to demographic characteristics, but differ with respect to one or both of these psychological characteristics. The same holds true for users and non-users of some products.

In Figure 7, we have the distribution of male users of a particular product by age and by socio-economic status. There

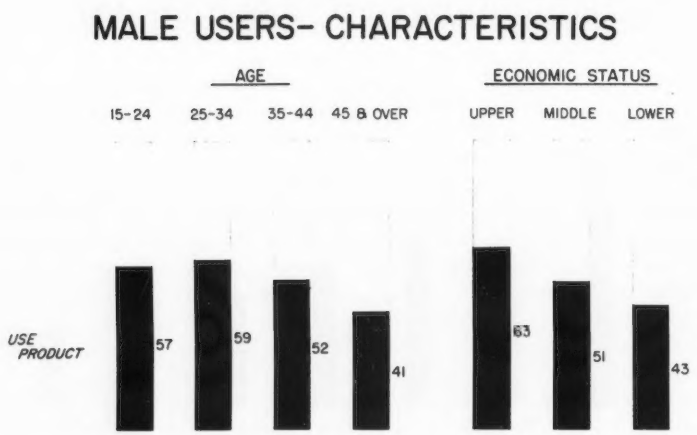

Figure 7

are differences, but they are not striking. In Figure 8, we have usage by the two psychological characteristics. Here, the differences are striking. If I were at liberty to divulge the product,

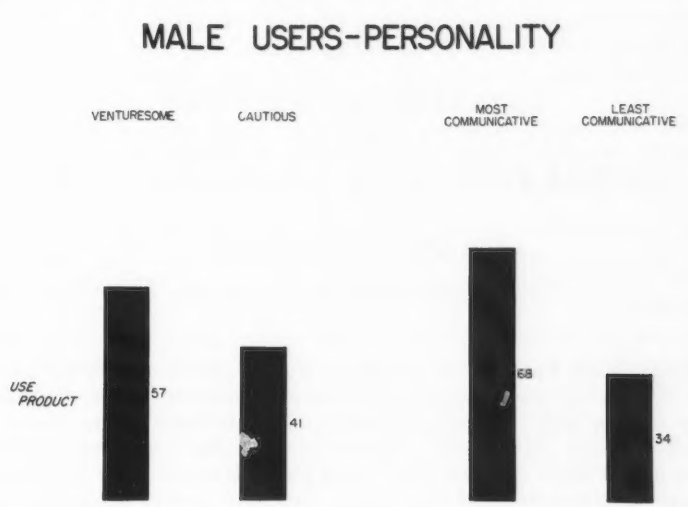

Figure 8

you would say these results were understandable and expected. With the development of these psychological characteristics, the marketer who has used the usual demographic characteristics to advantage, will now have whole new fields to explore.

With these examples, I have tried to give you a brief outline of recent developments in our field. There are some people who have said that in a field where maturity has been achieved, progress is slow. However, when progress and new developments do occur, the results of these new developments tend to be of a discontinuous nature, and, as a result, are of much greater consequences than developments in the evolutionary stages.

The new techniques which I have described do not fall into the category of doing things on a bigger or grander scale than previously. They do, however, fall into the general category of experimental design and the proper use of experimental design in marketing surveys increases the efficiency and the productivity of these surveys.

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CONSUMER SURVEYS TO DETERMINE SYSTEM OPERATION AND LOAD GROWTH

GEORGE L. LAHODNY*

The Detroit Edison Company

CONSUMER surveys as they apply in the public utility field are somewhat different from the usual consumer study, because they involve only a strict, objective measurement of the use of a given product or service. Customer attitudes or preference or need do not enter into the final determination of results. They deal solely with the "what" of a given situation without consideration for the "why" or "how come."

These studies, therefore, present special problems, and conducting them requires using special techniques and methods.

Before I begin I would like to inject one word of explanation. My specific knowledge of this subject is limited to its use and application in the electric utility business. My discussion, therefore, will be built around how load studies are used by electric utilities. Those of you who are associated with other branches of the utility industry may feel that what I have to say does not apply in your field. This is perhaps true in the particular, but in a more general sense I think the information I have will be of value and be applicable in almost any area.

We in the electric utility business have two continuing problems:

First, the nature of our business requires that we know with a high degree of accuracy how much electricity our customers are going to need today, tomorrow, next week or next year. We cannot store our product, nor can we ask our customers to wait for it.

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It must be there at the flick of a switch when they want it, which means that we must have generation and distribution equipment sufficient to handle our customers' needs and demands in advance of the time that they will actually ask for it.

Second, because of the high investment costs of plant and equipment, electric utilities have to get as much mileage as they can out of every investment dollar they spend. This, again, is a very serious and something of a special problem. They have to have production and distribution facilities available to handle the peak demands of their customers. Unfortunately, this peak demand occurs for only a few minutes on a dark day in December, which means that for the rest of the year this equipment could stand idle. Idle equipment costs money and therefore one of the big jobs that an electric utility has is attempting to find ways of encouraging customers to use electricity during these so-called valley hours.

What has all this to do with load studies. Quite a bit! Load studies are the most effective means we have for finding the answers to both of these problems. By determining how much electricity our customers use on an average basis, and when they use it, we can predict quite accurately what their demands will be in the future. Likewise, by conducting applicance load studies we can determine which appliances have the most profitable loads, and which ones either singly or in combination, will increase class and system load factor.

Just exactly what is a load study? In a word, it is simply determining the use characteristics of an appliance, a group of appliances or an entire segment of the market. Boiling it down a little further, there are four different types of load surveys:

First, individual appliance load studies. These are used to determine the use and demand characteristics of any application of electricity, such as a range or a dryer or a water heater or an air conditioner.

Second, there are group appliance load studies which are the same as individual appliance load studies, except that the tests are made on groups of appliances, such as an entire electric kitchen or electric laundry.

Third, load studies are made on an entire home. These studies have been used most extensively in connection with all-electric homes, which are of particular interest and concern because they have extremely high demands and kilowatt-hour use and therefore usually require special equipment to serve them. Incidentally, this kind of a study is becoming more and more important because all-electric homes are becoming more and more prevalent.

Last, load studies are made on groups or blocks of homes.

Such studies are used primarily in determining transmission and distribution requirements in various parts of the utility's service area.

How does one go about conducting a load study? Basically, it is very simple. You simply go out and find a congenial, cooperative customer who will let you put a meter on his appliances and then you measure his demand and kilowatt-hour use. By taking periodic readings a pretty accurate picture of the use characteristics of any group of customers or type of appliance can be obtained.

Of course, like any other survey, there is the problem of selecting a representative sample and there is also the problem of metering appliances over a long enough period of time in order to get a true picture of the annual use pattern. This last is very important because use of an appliance varies from season to season—sometimes even from day to day.

Normally, in load studies, the sample is restricted in size to some 60 to 80 consumers. This small sample is necessary, because load studies are very expensive surveys to make, which, of course, automatically limits the number of customers in the sample. Another limitation on sample size is the space and time requirements of meter testing procedures. Compact modern homes with kitchens and utility rooms built for high efficiency and size do not have convenient corners for metering equipment. Likewise, homes where all members of the family are working or where the bread winner is on a night shift cannot be used because of the difficulty in getting meter readings. However, by careful selection of the sample, reliable information can be obtained and from it accurate deductions and conclusions can be drawn.

Now, how is load study information used? I have already pointed out that one of its uses is to statistically project customers future needs for electricity and therefore the company's future needs for additional plant and equipment. In addition to this, load studies are extremely valuable as a basis for planning effective and profitable promotion and sales programs. I would like to illustrate this by telling you a very brief story about a load balancing program that we conducted in The Detroit Edison Company a few years ago.

Back in 1950, we were faced with the problem of expanding our plant and equipment at an unprecedented rate to meet the rapidly growing demands of our customers. Because of the high costs of this expansion, we were also faced with the problem of determining how we could get the most out of the investment dollars we were spending—in other words, how we could increase the per cent return on our investment. The logical answer to this latter

problem was a load balancing program designed to fill in the valleys in the system load curve. We, therefore, decided to conduct a series of appliance load studies and tests in order to determine what we should promote and sell that would increase net profit and per cent return.

In conducting these tests we attempted to answer a number of questions:

> Did the appliance or appliances perform a satisfactory labor saving service for the customers at a reasonable cost?
>
> What were the use and load characteristics of the appliance or appliances?
>
> What was the maximum simultaneous demand at varying saturations?
>
> When did this demand occur and how did it fit into the class and over-all load patterns?
>
> How would the residential and system load be affected by the addition of large numbers of these appliances?

As a result of these studies we singled out as appliances for immediate promotion the range, dryer, water heater and freezer. We found that these four major appliances in the proper saturations would complement each other to the extent that an evenly distributed demand and use pattern would result. We further found that these appliances would provide convenient labor saving devices for customers and could therefore be promoted without adversely affecting good customer relations.

I would like to present a series of figures illustrating the load curves of these various appliances and how these appliance loads fit together and complement each other.

Figure 1 shows the load curve for the 366,000 ranges we estimated we would have on our lines as a result of our promotional program. I think you can immediately see that the range by itself is not a particularly good or profitable load. Notice the three peaks at 8 o'clock in the morning, 12 noon and 6 o'clock in the evening. And notice, also, the valleys created by these peaks. Our tests indicated that the range had an annual average use of 1,286 kilowatt-hours, a coincident maximum demand of .83 kilowatts and a load factor of only 18 per cent—considerably less than the 46 per cent load factor for the residential class as a group. However, in spite of the fact that the range by itself is not a good load

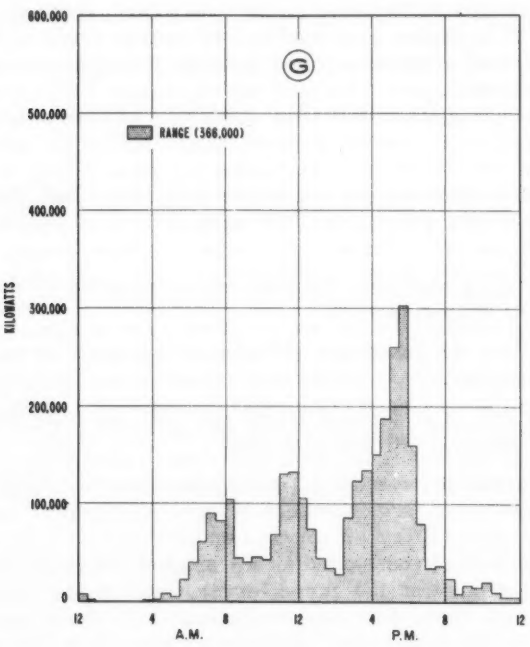

Figure 1

we established it as our sales leader because we found that customers who purchased ranges were more apt to purchase the other electrical appliances we were interested in selling.

Figure 2 shows the dryer load and range load together. It points up rather graphically how these two loads fit together and complement each other, particularly in the hours between 8 in the morning and 5 o'clock in the afternoon. Where the range by itself had a load factor of only 18 per cent, adding the dryer load to it in a ratio of one-to-one stepped up the combined load factor to 25 per cent. However, notice the tremendous valleys in the early morning and late evening hours. These still presented a problem and we had to find a way to fill them in.

So we introduced the off-peak water heater. Figure 3 shows how 183,000 water heaters would look when added to our lines.

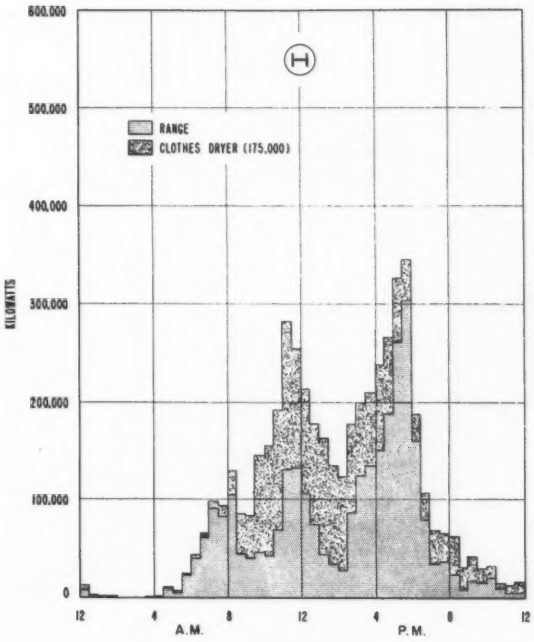

Figure 2

Notice how the water heater fills in those early morning and late evening valley hours, without adding to the 6 o'clock peak.

A word about these water heaters. Until recently, the basic flat rate water heater service—which is the one shown on this Figure—provided a 10-hour off-peak charging period beginning around 10 p.m. This water heater had non-interlocking heating elements of from one to five kilowatts each, depending on tank size. With this type of time control, our water heater load on this rate made no contribution to the early evening peaks of the residential class load and the lower element was not in operation during the morning periods of high industrial use.

Here's the last of our promotional appliances—the freezer. Figure 4 shows the freezer load added to the range, dryer and water heater loads. You will notice that the freezer is a constant

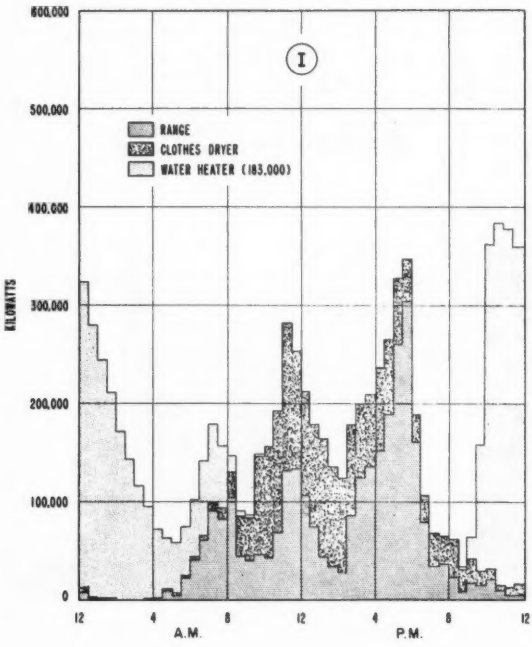

Figure 3

24-hour load. As an individual appliance it has a load factor of around 50 per cent because of its "on-off" operation.

That's the last of the appliances in our load balancing program. Figure 5 shows the effect of several other uses that are in rather extensive use in our service area. This figure shows the range, dryer, water heater and freezer loads and then on top of them the loads from bed coverings, incinerators and television. These seven appliances taken together in the saturations shown create a fairly stable and even load pattern. Incidentally, pay no attention to the apparent peak at 10 o'clock because when this curve is set into the system load curve that peak is absorbed.

So much for the load building program that we conducted, except to say that with the exception of the water heater, the program was very successful. We managed to increase load factor

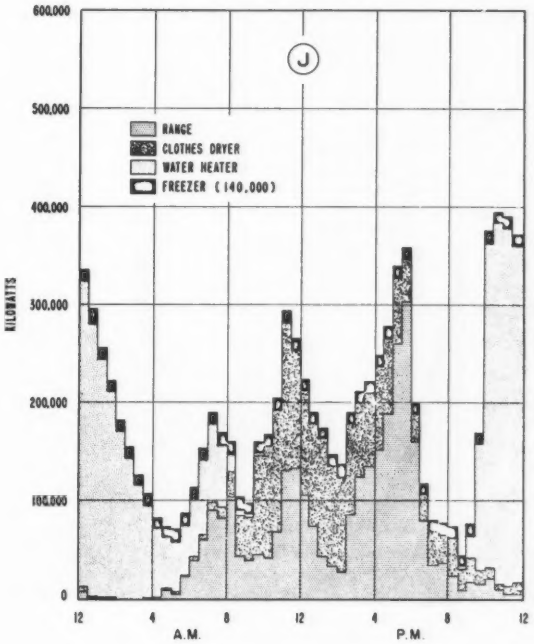

Figure 4

substantially for the residential class thereby increasing our net return and profit.

Load studies are an extremely valuable and useful marketing tool. However, before I end this discussion I would like to insert a word of caution. Load studies by themselves are not the answer to our promotion and sales problems. They do tell us what we *ought* to be selling, but they do not tell us what customers will buy. A case in point to illustrate this is the off-peak electric water heater referred to above. Our studies showed that from the utility's point of view, water heaters were an extremely valuable and profitable load and we spent a lot of time, effort and money promoting them. However, our customers did not feel inclined to buy them and as a result our programs were not too successful. It is the old adage that you can lead a horse to water but you can't

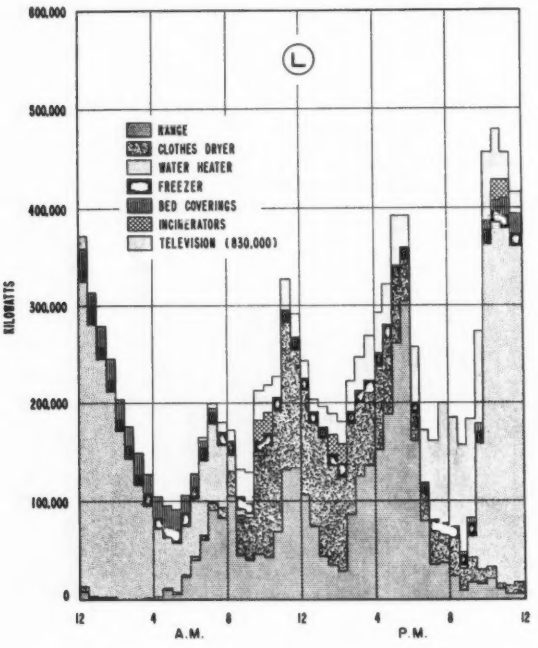

Figure 5

make him drink. We forgot to find out before we began our promotional effort whether or not our customers wanted a drink.

The point I am trying to make is that load studies are valuable only if they are combined with other market studies to determine what customers need, what they want and are willing to buy. By doing this, a happy medium can be reached with benefits for both the consumer and the company.

New loads are coming on the market all the time. Presently, residential central air conditioning and electric heat are gaining in popularity and general public acceptance. As a result, we are now in the process of conducting extensive load studies on these applications to determine how they can be served to both the customers' and our advantage. As other new uses appear, they should be studied and analyzed so that accurate determinations can be

made as to the capacity that must be available to serve these loads and as to how they can be served at a profit.

This has been a very sketchy and hasty discussion of load studies. However, I hope that from it you have been able to gain some knowledge as to how these studies are made and applied.

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SALES CONTROL DATA PREPARED BY ELECTRONICS

FRANK H. MUNS*

Westinghouse Electric Corporation

THREE years ago, Westinghouse decided to acquire a large electronic computer to be used for data processing. For more than a year, we have been operating that computer. The "honeymoon is over." We have seen the bride with her hair down and with her makeup off. On occasion we have seen her display her temper. We now can talk about electronic data processing from actual experience; not in anticipation of things we hope to accomplish in the future.

Those of us who have been studying and planning for electronic computers have heard and read many statements in the last few years as to what these machines will do. Some of these statements have indicated that "giant brains" will take all the guess work out of management. In fact at times I wondered if computers wouldn't take over the executive offices and run the company with only an office boy around to punch buttons.

Actual experience with computers has not been as startling as some of the early claims. The results to date, however, have been worthwhile. The machines haven't eliminated any vice presidents, but they are furnishing vice presidents with better information, thereby helping them to more profitably operate our company.

When the decision was made to acquire a Univac, three jobs were selected as the first to be programmed for the equipment. These jobs were payroll for 20 thousand employees in our East Pittsburgh Plant and our Headquarters operations; inventory control of some 34 thousand items in inventory at the East Pittsburgh

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**Frank H. Muns* has been associated with Westinghouse Electric Corporation since 1944. He has held a number of positions in the Controller's Department, and since 1954 has been Director of Office Methods and Procedures. Mr. Muns received a degree in Business Administration from the University of Illinois and attended the Advanced Management Program at the Harvard Business School.

Works; and Sales Control Data for our Apparatus Sales Division, the largest single field sales organization of the company.

We had been paying our employees regularly and on time with other equipment, so that the payroll application offered us only the opportunity to reduce clerical expense. In adapting the computer to inventory control, we expected to reduce clerical expenses. In addition, through the use of advanced mathematical techniques we hoped to reduce the capital requirement for the operation of the business and improve customer service by having the right inventory at the right time.

Development of sales statistics by means of an electronic computer appeared to offer three definite advantages:

It would enable us to produce better information for sales management for effective market planning and effective control of our sales organization.

It would make the information available faster so that it would be of greater value to our sales organization.

We anticipated some reduction in costs.

I am sure this group is more interested in the experiences that we have had in producing data for sales control than you are in payroll or inventory control.

Before discussing the details of developing sales statistics by electronics, I think that it is necessary to first review the Westinghouse organization so that you will have a better understanding as to the area of sales that we are discussing. Westinghouse is a highly diversified organization. We manufacture a complete line of electrical apparatus, varying in size from a tiny lamp no bigger than a grain of wheat for the medical profession to complete atomic-powered electric generating stations that fill a very sizeable structure. Our catalogs include such common, everyday items as ranges and refrigerators and fry pans and such unusual items as barium meal, both flavored and unflavored, which is sold in connection with our X-Ray equipment. Our organization is divided into five major product groups, the largest of which is our Apparatus Products Group. This group is primarily responsible for the design, manufacture and sale of products used by the public utility industry, heavy industrial companies, and the marine and transportation industries. The products of this group include steam turbines, generators, switchgear, transformers, meters, large motors, electrical controls and other associated products. The second group is General Industrial Products which includes small packaged control, wiring devices, fractional horsepower motors, lighting fixtures, welding apparatus, elevators, air-handling and air-con-

ditioning equipment, X-ray and electronics. Most of you are probably familiar with our Consumer Products. Our other two product groups are Defense Products and Atomic Power Products.

The sales statistics that we are developing with our Univac are for Apparatus Products and some General Products. These products are sold through our Apparatus Sales Division. This selling organization is composed of over one-thousand salesmen and sales managers located in two-hundred geographical areas or administrative units. The area managers report to 28 district managers who, in turn, report to seven regional managers, most of whom are vice presidents. The regional managers, in turn, report to the Vice President in Pittsburgh in charge of the whole Apparatus Sales Division. This sales organization services approximately 18 thousand customer locations assigned to specific salesmen. The products sold are classified into 280 product codes which can be summarized into 34 major product lines. Many of the products manufactured are large, heavy machines built specifically to the customer's order. However, a substantial portion of the sales are made from 36 regional warehouses which carry in stock such items as watt-hour meters, distribution transformers, control apparatus and renewal parts. The manufacturing plants also maintain stocks of completed standard apparatus for shipment to customers. Approximately 90 thousand orders are secured from our customers for these products each month. From these statistics you can see the enormous job that is required to code, analyze and summarize the sales information and distribute it to those responsible for sales both in our manufacturing plants and in our regional selling organization.

There are a number of basic problems that arise in developing sales statistics for a large national selling organization handling such a variety of products manufactured by a number of nearly autonomous manufacturing divisions. It appears most practical to prepare these data at a centralized point. This makes it necessary to overcome delays caused by transmitting the basic data to a centralized point, processing such a mass of data and then transmitting it to those who need it for decisions and actions.

To speed the preparation of sales statistics, we maintain a rigid schedule for transmitting data to headquarters. We have used the most modern office equipment to process those data. Prior to conversion to Univac, the most modern punch card equipment was used. However, as the size of the processing job grew with the growth of the company, it became more and more difficult to maintain a schedule of releasing reports in time for them to be of maximum value to management. The wheels of tabulating machines

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just wouldn't go around fast enough to meet our needs. Because of the enormity of the volume of records, it was difficult with punch card equipment to extract all of the pertinent information that would be helpful to sales management. It was also difficult to manipulate the data so as to furnish market planning with all the data that would be helpful to them.

Another basic problem has to do with the development of sales statistics as economically as possible which correctly reflect current selling effort. Some products ordered by our customers require as long as three years or more to engineer and manufacture. Obviously sales statistics from invoices for such orders would not accurately reflect the current selling effort. The use of invoices, however, permits sales statistics to be prepared as a by-product of accounts receivable records at a substantial savings in cost. Our method of solving this problem is to use both. Orders amounting to $5 thousand or more are taken into sales statistics at the time the order is received from the customer. Most of these larger orders are for items manufactured specifically for the customer and require time to produce. Statistics for orders involving less than $5 thousand are taken from invoices and sales credit is given at the time shipment is made.

Another very important problem in developing sales data is accuracy. Our sales reports must be accurate to the point where they can be used for paying salesmen's incentive compensation based on performance. To obtain such accuracy requires the establishment of controls as early as possible and proving all figures to those controls.

As I mentioned before, our source data for sales records are invoices and orders. Thus, every working day, copies of both invoices and orders flow into our headquarter's accounting department from regional accounting offices, field sales offices and manufacturing divisions. The first step is to code these documents with necessary information and to convert the data to punched card form. At this point, we have basically four pieces of information: the customer's identification which has been converted to a number; an unusual bit of code information which tells us if a salesman other than the one securing the actual order was involved in the order and is to receive sales credit; product code, and dollar amount. This information is totaled and balanced for accuracy. Weekly, this information is converted to magnetic tape, which enables the computer to read the information at a speed in excess of 12 thousand characters per second. The last of the source information reaches the headquarter's accounting department in Pittsburgh at 10:00 a.m. on the third working day

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following the close of the month. By 10:00 a.m. on the fourth day, the first reports are in the mail.

There are four reports prepared in this 24-hour period. The most vital report goes to our manufacturing divisions. This report shows the sales by product code made in each of the regions and in total. These sales are further broken down to four major industry classifications and to international sales. All figures on this report are balanced to the controls for accuracy and added to previous months' sales to give data on a year-to-date basis. In addition to showing the actual sales, the report shows objectives or quotas. This means that by the fifth working day, our manufacturing divisions know how their sales have been in the previous month as compared to quota on a world-wide basis. They can spot variations from quota by product code, by area and by major industry classification.

The main use of this report is for divisional surveillance of the sales results of the field selling organization. When a single sales organization serves several autonomous plants, problems are sure to develop. The plants have primary profit responsibility. Therefore, each plant must make certain that its products are receiving adequate sales effort. From this report, any weakening in sales effort can be spotted quickly so that corrective action can be taken. This report also assists division management in making decisions concerning such problems as pricing, advertising emphasis and the stocking of products in field warehouses.

After the first set of reports has been prepared the original sales data are processed against master records. These master records contain detailed information concerning the customer, including customer name, location assigned salesman, major and detailed industry classification, corporate relationship between parent and subsidiary companies and other data for statistical analysis. These master records also contain sales quotas by customer, product line, salesman and area. The results of combining the detailed sales information with the master record is a complete record of sales to each customer broken down to the 280 product codes. We also have a record of each salesman's performance broken down to the 34 major product lines and the same information by geographical area. We are now in a position to manipulate the data in any way that is desired. Since the information is on magnetic tape the computer can process these data at the rate of more than 12 thousand characters per second. When the data have been processed by the computer the reports can be printed on the high speed printer at the rate of six hundred lines per minute. The high speed printer is as important as the computer

in enabling us to put out timely reports. According to the *"Writers' Handbook"* the average full length novel contains about 80 thousand words. The Univac high speed printer could print such a novel in just a fraction over six minutes.

From our master records, nearly 50 monthly, quarterly, or annual reports are made, and data are available for special analyses as required. Some of these reports are made for specific manufacturing divisions. The majority, however, are prepared for the field sales organization. The sales performance reports give every segment of the organization information as to sales results and compare results against quota. The salesmen are given detailed information as to their progress toward earning incentive compensation. Each level of sales management knows exactly how each segment of his organization has performed in detail and how his organization has performed in total. For example, each district manager receives performance reports for each area reporting to him and for his district as a whole. Regional managers receive reports for each district and for the whole region. The Apparatus Sales Division Vice President receives reports for each region and for the total sales division. Another report is an analyses of sales to agents and distributors. As you would surmise, the market for Westinghouse products is not limited to the 18 thousand customers whom we contact directly. Thousands of other customers are reached through agents and distributors. From our customer records we are able to prepare monthly reports of sales through this channel of distribution. Compensation to agents and distributors depends in part on how effectively they sell the complete line of products assigned to them. The calculation of this compensation is comparatively simple with a large computer.

Many reports are prepared primarily for our market planning organization. These include reports of sales by detailed industry classification and analyses of sales to complex corporate organizations. Special reports to aid specific market studies can now be made quickly and at a minimum of cost.

We are now in a position to make further studies for the sales organization. For example, one area that needs study is the economics of selling. How can our sales efforts be best directed to return the most profit? Are we spending enough to sell the more profitable lines, or too much to sell low profit items? Do some customers require more selling effort than the profit on the items they buy? The solution to problems such as these may be possible now that we have our basic sales data on magnetic tape so that it can be readily manipulated by the computer.

What are the advantages that we have been able to obtain from preparing sales statistics on high speed electronic data processing

equipment? First, and perhaps most important, is speed. As I mentioned earlier, our first reports are issued on the fourth working day following the close of the month. The sales performance reports are out by the sixth of the month. When certain scheduling problems have been solved we expect to have practically all regular reports completed by the tenth of the month. How does this compare to the schedule that we were able to maintain with the most modern tabulation equipment available? All reports are issued substantially earlier. Some reports are available months sooner than the best we could accomplish with punched card equipment. I don't think it necessary to comment on the increased effectiveness of current reports as compared to statements only a few weeks old. It is like having today's newspaper today rather than next week.

The second important advantage that we are obtaining with electronic equipment is completeness of reports and our ability to make special analyses. With Univac we can in a very few minutes summarize our sales performance reports by area, by district, by region, and for the company as a whole. With tabulating equipment, this job was too time consuming to be done. Performance reports were sent out by area only, and if any summarizations were made they were done manually in the field. You can guess how much of this summarization was done manually. Now that complete reports can be prepared they are considered vital.

With tabulating equipment it was practically impossible to correlate complete quota information and compare it with actual sales. Where quotas were shown on statements they were annual figures and mental or manual calculations had to be made to compare them with year-to-date sales information. We now show year-to-date quotas on all statements where they would be meaningful and calculate actual sales as a percentage of the quotas. Other indices can now be injected into any of our analyses as we are no longer limited by the size of a tab card and the limitation of tabulating equipment.

What about the cost of preparing our sales control data with electronic equipment? As I said in the beginning we expected to make some savings in expense. Those savings have not materialized. Our sales statistics are costing us more now than they did when we used tabulating equipment. This does not mean that our original estimates were wrong. The computer on this job has worked out much like a food freezer often does for a family. You purchase a freezer expecting to save money but end up eating a lot better. We have much better, much more effective sales statistics today.

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Are the improved reports worth the additional cost? Our Vice President in charge of the Apparatus Sales Division made this observation. The profit resulting from a one per cent increase in the effectiveness of the selling organization will amount to at least ten times the increased cost of preparing the new sales statistics using Univac. He believes that the additional information now available and the improved timeliness of the reports will increase the effectiveness of the selling organization substantially more than one per cent.

It has not been an easy job to develop the new sales statistics program for Univac and to prepare the detailed computer instructions necessary for the computer to carry out its functions. Several man-years of work have been required. Many long nights have been spent at the computer in testing the programs, purifying the data and finally obtaining a smooth running computer application. It has been satisfying, however, to finally see this program become an actuality and witness the enthusiastic acceptance of the operation by our sales organization.

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OTHER THAN GIANTS CAN BENEFIT: PLANNING STORE LOCATION

ELI J. GOLDBERG*

Rayco Manufacturing Company, Inc.

APPROXIMATELY four and a half years ago, Rayco initiated the expansion of its chain of auto seat cover and convertible top stores into the Chicago market. Six men from the Real Estate Division spent over a year locating the six stores now operating. Three years ago, Rayco opened up stores in Los Angeles after working with four Real Estate men for three months. This minimization of huge expenditures of time and money was accomplished through the efforts of the (Operations) Research Division.

CLIMATE OF THE FIRM

My remarks must be prefaced, by emphasizing the necessary business climate existing in Rayco which permits expression and development of Operations Research.

Rayco is a closed corporation engaged, under the leadership of Joseph Weiss, in the manufacture and sale of automobile seat covers. It channels distribution to a national retail chain of franchise dealers who merchandise Rayco's products exclusively. Seat covers have been retailed for the full eleven years of Rayco's existence, and convertible tops for six. During this last year, planning has been completed and operations begun in the automotive replacement parts field—mufflers and tail pipes.

The expansion, happily geometric, has thrown into clear focus the need for over-all programming with the compass needle pointing strongly in the direction of, to belabor a phrase, scientific management, organizational thinking and human relations.

**Eli J. Goldberg* has been Director of Research for Rayco Manufacturing Company, Inc., since June of 1953. Previously, he had been Chief Statistician for the B. Manischewitz Company and before that Research Analyst for Schenley Industries. He received his BS degree from New York University in 1941, and his MS degree from Columbia University in 1942.

Structurally the design is such that the head of each division (Merchandising, Production, Personnel, and so forth), reporting directly to top management, sits on the Executive Committee, which integrates, sets policy, and initiates inquiry and research into matters among and within divisions.

In turn, the Executive Committee delegates responsibility in certain areas to sub-committees for developing and resolving matters peculiar to each division. This method brings joint fresh thinking to bear, educates all division heads in areas not within their daily sphere, generally widens perspective, and eliminates the "my-own-axe-to-grind" philosophy. For example, the Merchandising Sub-Committee has a membership of, among others, an architect, a psychologist, a statistician, and a production man—a far cry indeed from the days when merchandising policy was resolved by a group composed solely of members of the Merchandising Division.

The Research Division of Rayco sits on the Executive Committee, works with a sub-committee devoted to research matters, and participates in the membership of many other sub-committees. Research thinking, therefore, is diffused throughout all other operating groups and, conversely, receives the benefit of other divisional attention.

The Research Division is an integral part of Rayco's management structure, working in a free-objective environment and basking in a climate of complete participation in all corporation activities—subject, of course, to the consciously built-in system of checks and balances described above.

In short, Rayco conceives of itself as sooner or later becoming a full-fledged management consulting team devoting itself, far-fetched as it may seem, to any product or any service where enough reward lies. Since logic—not "flair"—integrated facts—not intuition—must be the basis for the success of such a team, and since, furthermore, mathematics is the language of logic and integration, this management of Rayco, with merely a small stretch of the imagination, is gradually assuming the characteristics of an Operations Research group in the broad sense.

HISTORICAL SETTING

But now to return to the planning of store location. Rayco's Real Estate Division has successfully located and planned, with their original techniques, over 80 stores in a relatively short period of time. However, "running down" a city has always been a long and arduous task, with, for example, Chicago, taking the

time of a goodly number of men for more than a year. Obviously, this is extremely expensive and furthermore not always fruitful. Often, after long and detailed analysis, it was decided not to open a city at all. In addition, while there was general consensus as to what makes a site optimum, there was always much discussion, and even wrangling, since the factors which all Real Estate personnel considered important still had varying weights and importance with each man. Furthermore, the lack of clear-cut yardsticks and the differences of opinion added more fuel to the fire of expense by heating up uncertainty and the tendency to run down the city again and again until the doubts of all concerned, including management, were for the most part resolved. Over-conservatism was therefore the watchword, and in many cases a city was laid out for too few stores. This last point has indeed become an important current problem. If, as now can be said, a certain territory is worth five stores, where can they be located without seriously affecting the draw of the three stores presently in operation?

The settling of this problem, or the resolvement of the potential concept, was the first problem which the Research Division faced when it was formed four years ago. On a rational basis it had to derive evaluative techniques to determine whether it was worthwhile to go into a territory; if so, how many stores should be built, and what were the intrinsic factors concerning the area which position the stores' volume? What are the effective weights of each of these factors, what methodology can be applied to set up a fairly rigid formula to consider these questions, and how can all operating efforts be concentrated in the Patterson home office so that the Real Estate Division need not concern itself with other than the proper exercise of its function—namely, to obtain leases?

This evaluative technique, this potential formula, has been derived and currently serves as the yardstick in measuring the worth of an area. It is the major factor in the decision process.

There is no hesitation in stating, however, that the picture is not as rosy as it appears. The final formula is far from perfect—in fact, perfection may be unattainable even if given all the time in the world. But the formula is a good approximation of the ultimate one, is certainly objective in its application, and most assuredly minimizes time and expense. Bear in mind that Rayco must strive for perfection in real estate terms much more than any non-franchise chain. Each store in the chain must stand on its own feet and make a decent profit for its owner. There can be no laying off the losses of one store against the profits of many. A man in acquiring a Rayco franchise spends about forty-thousand dollars in cash and requires assurance that his risk is negligible.

The Rayco Research Division, therefore, has a planned continuous program of constant refinement and readjustment.

In the development of the formula and the substitution of fact for fancy, work progressed towards the explanation of Sales Potential rather than Market Potential. What part of the expected total sales of seat covers should Rayco expect to enjoy during a stated period? There was no direct concern with Market Potential or the expected sales of seat covers by all suppliers during that same period. Increasing the share of the over-all market was another problem altogether and the actual constant increase enjoyed is another reason for the continuing refinement of the formula.

BY-PRODUCT BENEFITS

There are implications in the resolvement of Sales Potential apparent to management from other than the strictly day-to-day operation of the Real Estate Division. From the long-range point of view, a tool exists for developing the order of expansion. Since Rayco, as is the case with most firms, is not in the position of being able to develop all conceivable markets simultaneously, nor would this be the wisest thing to do, decisions must be made as to which market or markets should be opened first, and the order in which the others should follow.

Secondly, with the formula having been applied to every territory in the country, and management decision having been reached as to where stores shall ultimately be built, the location of new factories in areas minimizing freight costs and the determination of the productive capacities of these factories is feasible.

ANALYTICAL APPROACH

The technique used in deriving the formula is that statistical method termed Multiple Correlation. There is no need to use the language of mathematics to explain the phrase—it sounds at least vaguely familiar to most of you. And there is nothing awe-inspiring about it. Briefly, it explains the variations in a series of data by relating two or more other series to the original one. In Rayco's case, what accounted for Detroit consumers buying 20 thousand sets of seat covers a year while Wilkes-Barre consumers bought five hundred? All figures, by the way, are artificial. It does not take a statistician to realize that there are far more cars in Detroit than in Wilkes-Barre, and that car population may be the correlative factor which explains the variation in seat cover sales.

But it is not enough to know that two out of three cars in the country are covered. Things would be very simple if this were so. The facts are that two cities which have exactly the same number of cars may still differ widely in their seat cover acceptance. Why? Perhaps, to argue in extremes, all the cars in one city are 1956 Cadillacs and all the cars in the other city are 1948 Fords. By and large, the owner of a new Cadillac is not concerned with protecting his upholstery—he will buy a new car next year anyway. But the owner of an old Ford is probably more concerned with the protective value of seat covers. Again, it is almost sure that the Ford city will buy more; that the middle income city will buy more than the ultra-high-income city. And so now there are two factors, car registrations and income, which help explain variation in sales. The correlation involves a multiplicity of factors and the technique is most appropriate. Incidentally, in probing by discussion and interview during the initial stages, about three hundred factors or ramifications of factors worthy of investigation on a logical basis were found. Take special note of these two words, "logical basis." Multiple correlation methods do not define causality, the rationale for each factor used must exist.

"WORTH" OF HISTORICAL METHOD

Car registration and income were mentioned above for a special purpose. Even though the Rayco Real Estate Division could logically conceive of three hundred factors affecting sales, practically speaking, only these two were fully considered during an investigation. All the rest were summed up into an intangible called "feel." And "feel" should not be minimized completely. Years of proper experience can sometimes intuitively do the job as well as any correlation formula. What is the worth of these two factors?

First, we realize that in the absence of any other information the most reliable guide for a decision is an estimate based on the average of past experience. Thus, if the only data at hand are sales statistics for all of the metropolitan areas in which Rayco stores have been built, then, in opening up the San Francisco area, the assumption would be that, as an average area, it could absorb 9,500 sets per year: this being the average number of sets (excluding wholesale) sold per area during calendar 1954. Then, since the average store sold 7,600 sets, one location would be sought. However, the original sales data upon which the average was based ranged from 1,100 sets in Johnstown to 71,000 sets in New York. This range is so huge that the average deviation of

each area from the average 9,500 amounts to plus 105 per cent.

What this means is that two out of three times the potential of a territory is estimated in this manner, the true sales in sets resulting from opening stores would be 9,500 plus 105 per cent, minus 51 per cent, or between 4,700 and 19,500. In the case of San Francisco, therefore, all that could be intelligently estimated is that between .6 and 2.6 stores should be built. Obviously, the average alone has no worth in estimating potential. But the average of 9,500 and its margin of error of plus 105 per cent is a most necessary value in evaluating the results of later work. As has been stated, the Real Estate Division did not use the average, but did use the two independent factors of registrations and income to explain variation. If these factors were of any value, the use of them must have reduced the error of plus 105 per cent to a more realistic level.

After performing the calculations, the Research Division found as follows: Income correlated with sales reduced the error from 105 to 82 per cent. Registrations correlated with sales reduced the error to 55 per cent. Income and registrations multiple correlated gave a final reduction to 50 per cent.

The net result of the former thinking and the best that could be found from these two factors considered jointly was that four stores should be opened, knowing that the odds were in favor of having the territory support easily as many as six stores. Considering the understandable conservatism of the Real Estate Division's former thinking, Research could venture a guess that only three stores would have been opened, and a "wait-and-see" policy would have followed. Consider the loss in profit due to insufficient coverage and the extra expense entailed the following year when investigation would have been initated for the fourth, fifth, and even sixth stores.

In any event, by correlating registration and income with sales, there was a progressive increase in the accuracy of the estimate as compared to one based on the average. However, the margin of error was still too large for any operational confidence in the results. Obviously though, the more independent factors treated simultaneously, the better will be the estimate and the smaller the margin of error. It was at this point that the examination of the aforementioned three hundred factors became necessary.

STEP IN THE SOLUTION

But a word in passing concerning the factor whose variation is being explained—the sales of Rayco. The heart of the whole study

lies in the proper definition and choice of the dependent factor. It is the control variable, and the reliability of the results is directly proportional to the inherent reliability of the sales data.

Almost always more valid results are determined from an analysis of market potential rather than sales potential. Preferably, the territorial sales of an industry should be used as the control, as it is much more likely that the industry as a whole has enjoyed sales in proportion to the influence of the independent factors than has any one company. Here the Research Division was forced to use Rayco's own past sales as the control, since there was no other choice—industry figures were unavailable. It must be understood, then, that the use of sales as the dependent factor simply reflects the company experience, good or bad. Rayco may have neglected certain portions of the market, have spottiness tied in with success or failure in meeting competition, and is definitely not at similar saturation levels in different areas of the country. Stores opened in recent years have had the benefit of better location technique and better architectural planning when compared to stores opened in the earlier years.

Although the Research Division was forced to use the company's own sales data, it realized that this data could be expressed in many ways—12 were actually used. For example, total dollar receipts per family, total number of sets per automotive dollar expenditure, etc. The expression which has yielded optimum results was found to be: Number of sets (excluding wholesale) per square mile.

Here again, another hidden assumption and a new problem for future exploration arose. The government's definition of standard metropolitan areas was used as the base in determining the number of square miles for each territory. This assumed that the trading area of stores in a territory paralleled the government's outline for the same area, which is not necessarily true. Work, incidentally, in trading area theory as it was finally resolved was found to be very useful in location and relocation analysis—but that is another topic.

To return again to the original three hundred factors. For technical reasons it was impossible to consider these all simultaneously in relation to sales. Therefore, each one was examined on a one-to-one basis and its logical meaning was explored in discussion. Only those factors which survived entered into the full-scale correlation. However, there were still 74 of them. They included, for example, "average January temperature," "per cent of the dwellings which were one-unit detached structures," and an architectural appraisal of the physical appearance of each store.

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The next step involved the joint analysis of the 74 factors to determine which were the significant ones on a net basis—that is, after considering the effect of all others taken at the same time. The clearer picture thus obtained resulted in narrowing down to 37 strongly related factors which constitute the formula. For the statistically oriented, the multiple R was .98, or about .92 after shrinkage.

DATA PROCESSING

So far, the mechanics of computation have not been discussed. There are roughly ten stages, each one of which involves literally thousands of calculations. The derivation of a formula with 37 variables is practically impossible, and unnecessary, even if it were possible by desk calculator techniques. If the derivation were programmed for a hand operation, the estimate indicates a year for the solution—with no backtracking permitted in this estimate for error correction. Only the development of electronic equipment to its present level of proficiency permitted Rayco to embark upon the program. Even firms with unlimited time and money would hestiate to allocate it if only desk calculators were available. Rayco used the IBM 701 and its multiple correlation program to resolve the regressions at a cost of a few hundred dollars for a few minutes machine time. Please realize that there is nothing new about multiple correlation, but its application in such depth was not possible until the advent of high-speed computing machinery.

CRITIQUE

Gazing at the results with jaundiced eyes, it is felt that the problem of potential could have been solved with far fewer factors. The need for the 37 arose, since the factors used were not critically refined. For example, the factor of first importance and greatest weight is "Automotive Outlets Per Family." The base is a count of any retail store selling anything in the way of automotive equipment—be it motor boats, new cars, used cars or seat covers. Perhaps any one or group of the components would show a better relationship. As another example, the second most important factor was found to be the opinion scale, which rated the effectiveness of our operators. No matter how rigidly the scale is constructed, there is no telling how close it comes to measuring the operator's true effectiveness.

Permit a digression to dwell a bit more upon this operator

rating. Good or bad as it may be as a measure, it still showed up as the second most important factor. Its position and rank is entirely logical. A bad operator can kill the best location in the world. The development of this point was of such obvious importance to the Personnel and Franchise Divisions that the formula was applied to each of Rayco's existing territories, using in the calculation, not the actual rating of the operator, but the figure of 80 per cent (100 per cent being perfect efficiency). This 80 per cent value is certainly reasonable; yet, the results were most startling. If every operator in the chain were at the 80 per cent level, then the over-all sales volume of the chain would increase by 56 per cent—a fantastic price to pay for salad day thinking when any man who had the necessary cash was a likely candidate for a franchise. It is pleasing to state that the Franchise Division has for some time now been engaged in the difficult process of buying out the weak operators, as indicated by the survey, and re-selling to men of better qualifications. The increase in volume has been along predicted lines. Now, as a result, the Research Division has on its future agenda the determination (again by multiple correlation technique) of those factors, be they of the application-blank type or test scores, which account for an operator's efficiency.

APPLICATION

Returning to the original example of San Francisco, the final formula indicated that six stores certainly, and perhaps even seven, should be opened. The margin of error was reduced from the plus 50 per cent, considering income and registrations only, to plus 16 per cent, considering all 37 factors. Car registrations ranks 31 in the 37 and is of relatively minor importance.

All that the potential formula has shown so far, however, is the worth of the territory. Management knows a priori how many stores can profitably hold. It still remains for the Research Division to apply the formula in such a manner that the Real Estate Division will concentrate its efforts in specific localities and neighborhoods. For this purpose the formula can be simplified and all factors which are not geographical in nature eliminated. For example, mean annual precipitation being uniform over the whole area to all intents and purposes can be disregarded. For site location the formula resolves itself down to a consideration of only nine factors. The large formula is applied only to the over-all trading area in determining whether it is feasible to locate at all, and the restricted formula is applied to each component part of the trading area. Again illustrating the case of San Francisco,

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the formula was applied to the 249 census tracts and 35 small cities in the San Francisco-Oakland Standard Metropolitan Area to obtain the potential for each segment of the whole area. Again use of electronic equipment was a necessary part of the process.

At this stage a map of the area is drawn, showing the Rayco sales potential on a density basis. It is almost always apparent that there is uneven density on a tract-by-tract visualization. Some tracts will produce far more sales than others. To make this density map still more meaningful, a second map showing contour lines of equal potential is drawn, and the cluster points of high potential usually stand out like the proverbial sore thumb. These cluster points literally determine the exact number of stores. San Francisco may well contain the potential for seven stores on an over-all basis, but if only six cluster points develop and the potential for the seventh store is too widely dispersed, then only six stores will be opened.

The exact pinpointing of the recommended site depends upon the minimization of total customer mileage and travel time. After all, it is felt that the store should be so located that the maximum number of customers have the shortest distance to travel in the least amount of time. Center of gravity techniques are brought into play, with consideration being given to Reilly's Law of Retail Gravitation, and detailed study is made of accessibility, highway patterns, and traffic flow. In almost all cases published data suffices.

Remember that all this work resolves itself down to a couple of mathematical points on a map. The point itself is not to be taken too literally; it is rather the focus of an area approximately 10 to 20 city blocks on a side. Of course, Real Estate investigation limits itself to the appropriate roads and streets indicated within the area. The Research Division still remembers its dismay when, in the first application of the formula, it did not inform the field men of this 10-block area and sheepishly had to point out later that the intention of the work was not to open a store in a cemetery.[1]

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1. Editor's Note: An earlier report on Mr. Goldberg's work is available in "Using a Computer to Run a Business," *Business Week*, May 14, 1955, pp 68-75.

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A SIMPLIFIED SOLUTION FOR THE LOCATION OF MARKETING OUTLETS USING AN ANALOG COMPUTER[1]

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University of Pennsylvania

INTRODUCTION

THIS subject has been chosen for two reasons. First, in the belief that the use of computers as an aid in solving marketing problems is in keeping with the subject of our conference "MARKETING'S ROLE IN SCIENTIFIC MANAGEMENT." Second, to plead the cause of analog computers in this day of emphasis on the high speed digital computers. I have nothing against the Univac, "704," "650" et al, but I feel that there is a definite need and place for the analog, which is being overlooked in the hasty race by firms to acquire high-speed digital computers. The problem which will be presented in this paper might be compared, in type, to the work of Eli J. Goldberg of the Rayco Corporation, author of the paper immediately preceding this one. I mention this because you may be familiar with it and it too was the solution of a location problem in marketing, but solved by using a digital IBM computer.

However, before presenting my problem I would like briefly to compare the analog and digital computers.

ANALOG & DIGITAL COMPUTERS

The digital computer is familiar to all of us in the form of the desk calculator. Basically it consists of a series of counters

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1. This work was supported by the Air Research and Development Command under contract No AF 18(600)-125 with the Institute for Cooperative Research of the University of Pennsylvannia.

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which register and add in discrete steps. In the majority of these computers all mathematical operations are accomplished by performing combinations of addition. Multiplication is performed by repetitive additions, and integration by summation. Also, converging series may be used in place of trigonometric functions. In the larger calculators, planned systems transmit counting impulses between counters, as prescribed by the nature of the problem, and control the sequence of the computations.

The necessity for reducing mathematical operations to arithmetical ones requires considerable planning or "programming" before the digital computer can handle a problem. Also, because the indirect computations must usually be carried to more places than are required in the final result, the computing elements must have the capacity for dealing with very large numbers. Consequently, electronic digital computers find their best use in massive problems, particularly in the solution of problems that require many repetitive operations and a high degree of accuracy. Thus accuracy, large capacity and speed are the unquestioned advantages of the digital computer.

Analog computers on the other hand are less accurate than digital computers, but by the same token they are usually much cheaper, easier to operate and more flexible within the framework of a given problem. These computers are generally grouped into types (mechanical, electrical, electromechanical, etc.) according to the nature of the physical quantities used to represent the mathematical variables. The slide rule is the simplest analog computer and might be compared in its simplicity to the desk calculator as a simple example of the digital computer. In the analog computer physical quantities such as voltages, shaft rotations, or in the case of the slide rule measurable lengths, are made to obey mathematical relations comparable to those of the original problem. The physical quantities, or analog variables, may be easily varied and measured and made to behave in a manner analogous to that of the problem's original variables. The magnitude and the time scale of the analogous variables can be reduced or increased as needed in order to make their measurement easier.

Specifically, I would like to talk about the electric analog computer. Within the analog field it is relatively cheap, easy to operate and maintain, and is quite flexible in its operation by the simple expedient of using patch cords, plug-in resistor boards, etc. Perhaps the greatest advantage of the electric analog is that usually it can be constructed from standard parts without the precision machine work required in mechanical analogs. Electric analogs such as the ultraflexible differential analyzers are capable of solving a

wide range of problems and on the other hand highly specialized electric analogs may be constructed to solve specific problems such as the fire control computer built to beat the German V-1 rockets over Antwerp.

The analog computer adapted to this location problem is neither so grand nor so flexible, but I hope that it will serve to illustrate the potentialities of this type of computer in solving a location problem.

THE GENERAL PROBLEM

The problem stated in general terms as it applies to marketing is as follows. A firm wishes to locate n distribution centers to serve m market areas. The potential demand of each market area is known. The transportation costs to each market area from a potential distribution center are also known or can be approximated by an appropriate cost function. The problem then is (1) to locate the distribution centers and (2) to determine the stock of supplies to be carried in inventory at each center in such a way as to minimize total transportation costs.

Examples of this type of problem are numerous. A grocery chain, for example, may wish to locate several warehouses from which to supply its branches. A food processing firm may wish to locate several plants in a farm region for the processing of highly perishable foods. Other examples will no doubt occur to you. The number, n, of distribution centers is determined by capital cost considerations that are outside the realm of this paper.

Several practical limitations usually bound this problem. Often, only a finite-though-large-number of alternative locations are available, and costs other than transport costs must be considered. The solution proposed here assumes that these other practical considerations are relatively minor, and therefore that transportation costs are the only practical costs to be considered. Even in cases where this assumption is not valid, the solution proposed will serve to narrow considerably the region of alternative choices, thus aiding scientific management.

Odd as it may sound, the original problem which led to this work and the one which is offered as an example, was a simple one and somewhat academic in character. The University of Pennsylvania is building a faculty club, which, in the interests of faculty morale, is to contain a bar. Faculty offices are located in various buildings about the campus. The problem: where should the proposed faculty club and its bar be located so as to minimize the total number of man miles walked by the faculty from their offices to the bar?

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Only a finite-and-small-number of suitable locations were available. Hence, the easiest way to solve the problem seemed to be to measure the distance by the shortest available route from each building on campus to each of the available sites. For each site, the distance from each building was to be multiplied by the number of faculty offices in the building and the results summed over all buildings containing faculty offices. The site yielding the smallest sum would be chosen as the optimum location. The word "optimum," of course, means optimum in the sense of the problem.

Now the obvious generalization of this problem has been stated previously: suppose there were m bars to locate instead of one and many instead of few available locations. Where should each bar be located? How much inventory should each bar stock? What faculty members will patronize which bars?

If crow-flight paths are permitted and the bars can be located anywhere, or if transportation costs can be approximated by a continuous function of the plane coordinates of the bar locations, then it seemed that an analog computer could be used to solve the problem. In many real situations where only an approximate solution is required, transport costs can be approximated in this way, and the analog will provide solutions very quickly.

THE SPECIFIC PROBLEM AND SOLUTION

In selecting the site for the proposed faculty club, a single location was presently available, but the question arose as to whether a decision should be delayed pending the possible availability of some other sites. Therefore some generalized solution was needed rather than single evaluations of a series of potential and even possible sites. Putting this in terms of a transportation and location problem, two things were needed. The first requirement was the optimum point at which the total faculty-man-feet moved would be at a minimum. Second, contours of equi-distance from the optimum in the same units of transportation cost were also needed. In determining these it was agreed to measure the transportation costs in faculty-man-feet moved. Fortunately an electric analog computer was available in the University's Institute for Cooperative Research and after mathematical computation it seemed feasible to adapt it to this problem. The time available here does not permit a discussion of the mathematical solution of this

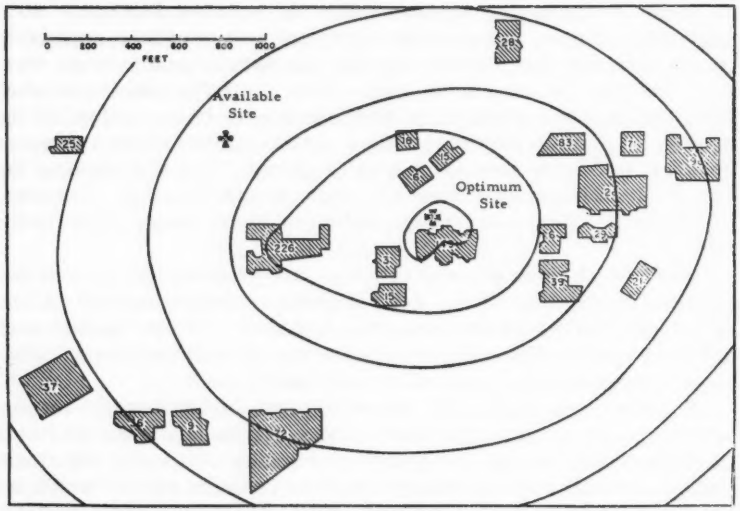

Figure 1

problem or a description of the analog computer.[1]

Figure 1 shows the demand areas, the available site, the optimum site and the iso-cost contours.[2]

The use of the various contours shown also enables a rapid check of all possible sites and the resultant changes in transportation costs. The conclusion reached in this problem was that the proposed site was the best available now or in the foreseeable future.

The cost function expressed for convenience in dollars per faculty-man-feet moved is

$$\$C = \sum_{i=1}^{n} Ti \left| X_i - Y \right|$$

and at the optimum is $\$9.1 \times 10^5$.

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1. For a further treatment of this see *"An Analogue Solution of the Generalized Transportation Problem with Specific Application to a Marketing Location Problem,"* Edward L. Brink and John S. deCani, International Conference on Operational Research, Oxford, England, September 1957.

2. Parenthetically it might be noted that the optimum location was in the psychological clinic, which many thought to be the correct place in which to locate a faculty club.

If the only available site, for example, had been on the second contour ring, the costs would be increased to $\$10.3 \times 10^5$ and so on. Mention should be made that it would have been possible in this case, for example, to so locate a club in order that, on the average, full professors would have to only walk 1/4 the distance that instructors did, associate professors 1/2 this distance, and so forth. This of course has its parallel in a marketing location problem when total population potentials must be adjusted to reflect the various socio-economic variables that determine total demand. The problem can also have a dual solution when it is desired to know what demands must exist over given market areas in order to support a distribution center of a given size in a given location.

Although this is an extremely simple case and the solution may seem trivial, it is in essence a practical problem. In this problem the absolute numbers of faculty are taken to be the "demand" factor. In reality any number of factors could have been taken into account to build an index of demand. By the same token, the analog is capable through its mechanism of handling transportation costs as any function of direct and proportional charges. For example in this problem if quantity discounts can be assumed, the transportation costs per man lessen as one moves toward the faculty club rather than being a constant unit cost and the cost function becomes logarithmic. The solution to the problem in this case is seen in Figure 2. Although the optimum site moves very little the total costs do change considerably.

The cost expressed in dollar terms now becomes

$$\$C = \sum_{i=1}^{n} Ti \quad \ln \left| X_i - Y \right|$$

and amounts to $\$3.3 \times 10^5$ to transport the faculty to this location as compared with $\$9.1 \times 10^5$ in the previous solution.

Frequently the nature of capital equipment, for example, allows, or dictates, the existence of many or n distribution points. Referring to the previous problem, let us assume that we now wish to locate two faculty clubs optimally and that transportation costs are again a natural logarithmic function. The two locations are shown in Figure 3, the total cost function being

$$\$C = \sum_{j=1}^{m} \sum_{i}^{n} {}_1 \; Ti^{(j)} \quad \ln \left| X_i^{(j)} - Y_j \right|$$

and amounting to $\$2.2 \times 10^5$.

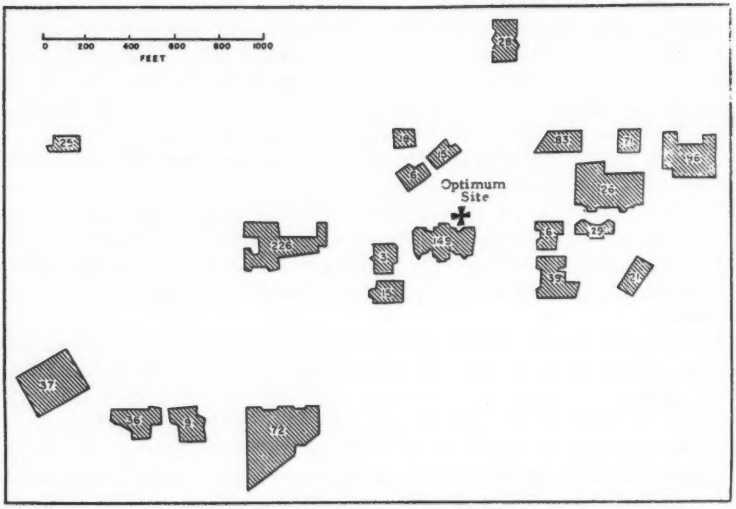

Figure 2

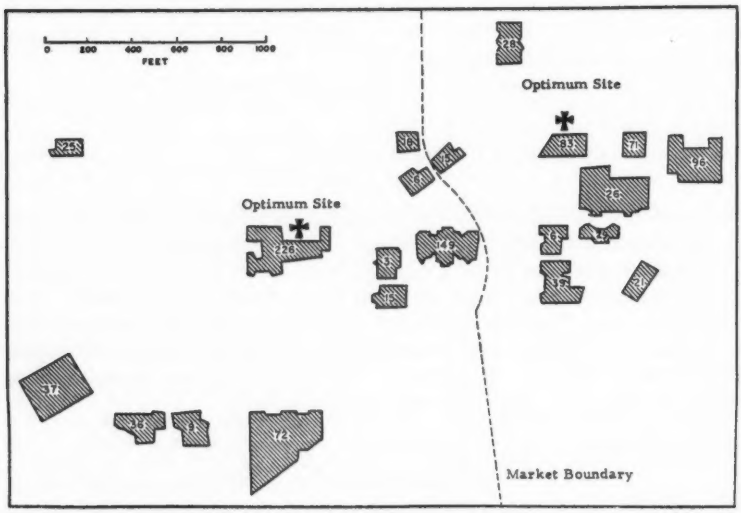

Figure 3

With the single market now divided into two areas it is a simple matter to aggregate the demand for each market and to determine the necessary inventories.

Thus the problem is solved.

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SYSTEMS DEVELOPED BY DEPARTMENT STORES TO BALANCE INVENTORIES

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IT is generally recognized that the inventory of a retail store typically represents a substantial commitment of the owner's capital. Since financial resources are invariably limited, the retailer's purchase of goods for resale is clearly an investment decision of some consequence. If this investment is to be maintained at a level which is adequate without being excessive, the flow of merchandise through the retail business must be carefully and methodically regulated. Consequently, it would seem self-evident that there is no sensible alternative to inventory management. The only alternatives would appear to be in the degree to which management is comprehensive and systematic.

Inventory management has received a great deal of attention in retail chain organizations, particularly in the department store chains. The rather considerable emphasis which large department store organizations have placed upon the management of inventories is very likely attributable to their characteristically sizeable inventory commitment. This commitment is not only sizeable in terms of value, but also in terms of the variety of merchandise which it includes. The purpose of this research has been to gain some knowledge of the principal means employed by large department store chains to manage their inventory investment. It was thought that an acquaintance with the methods and techniques which have been developed and used successfully by these larger firms might be of interest to other firms which do not have the resources to research and experiment extensively.

The organizations included in the study represent the ten leading department store chains in the nation from the standpoint of

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growth in sales and assets over the past decade and a half. Information was collected almost entirely by personal interviews with the home and regional office executives of these firms.

MANAGING THE RETAIL INVENTORY

The objective of inventory management is that proverbial conformity of stocks and sales which is known as a balanced inventory. The task of balancing inventories is fundamentally a matter of planning and control. Merchandise plans must be formulated on the basis of specific inventory goals and a mechanism of control must be developed to assure the achievement of these goals in practice. While planning and control are frequently regarded as distinct processes, the organizations included in this study tend to treat them as a single unified function, i.e. as parts of a system of inventory management.

While there are some variations in the details of procedure and forms between the different organizations, by and large the various systems of management employed follow a common pattern. Inventory objectives are defined in terms of the amount and type of merchandise which it is desired to have in stock at specified times during the planning period. These objectives are developed through the medium of the merchandise plan in which the precise amount of each classification of merchandise wanted in stock is determined on the basis of the sales possibilities of this merchandise. To assure that these planned objectives will be realized in practice, a means of scheduling purchases and analyzing the actual stock position is provided in the form of an inventory control mechanism. Not only does the control serve to regulate merchandising operations in accordance with the merchandising plan, but the data afforded by control records provide the principal basis for the various estimates which enter into the plan.

THE CONDUCT OF PLANNING

Although in practice it is difficult to determine where in an organization the planning process is initiated and specifically how responsibility for it is distributed, it is nevertheless possible to distinguish two different approaches to the problem of developing an effective merchandise plan. Generally speaking, the approaches appear to reflect different attitudes with respect to where the emphasis in planning should be placed, whether upon the proper merchandise assortment or upon the proper turnover of the merchandise investment.

The principal ingredient in the merchandise plan in all groups is, of course, the sales forecast. Past sales performance and internal conditions as well as local business conditions are closely scrutinized in all groups in the process of developing a forecast. It is in making the projections of planned stock from the planned sales figure that procedures differ.

Stores in four of the ten groups begin the development of their stock plans with the determination of proper assortments based on planned unit sales. Although there are certain differences in the techniques employed, stock planning in each of these four groups follows a fairly similar pattern. Regardless of the department, beginning-of-month stocks are planned in units to assure that the stock on hand in each price line and classification will have the proper colors, styles, sizes, and materials in relation to sales possibilities. Once the number of units of each item of merchandise which should be on hand at the beginning of the month to present a proper assortment of that merchandise has been determined, the unit stock plan is then converted to dollars. If the resulting ratios of planned beginning-of-month stock to planned sales are higher than is thought desirable, the decision is then made as to whether or not carrying this additional stock represents a good investment.

This decision as to whether or not the planned assortment should be revised appears to rest on a comparison of ratios within each of the store groups. If for example, the same department of two member stores in the same organization have had approximately equal sales during a given period, but one has achieved this sales volume with a lower stock-sales ratio than the other, the merchandise manager of the department with the higher ratio usually endeavors to improve his stock position in the coming period. This would mean that the planned stock figure for the department would probably be adjusted downward, even though this figure had originally been determined on the basis of what the merchandise manager considered to be a proper assortment.

The remaining six chains included in the survey begin their stock plans by selecting the proper dollar stock levels for the beginning of each month in the planning period. For the most part, the major determinant of dollar stock levels in each of these organizations is the desired stock-turn ratio. Once dollar stock levels have been decided upon, the emphasis is switched to assortment planning. In almost all instances, this switch is made in the merchandise departments of the individual stores. The process of converting dollar stock levels into assortments on an item-by-item basis requires tedious adjustments which sometimes necessitate an upward adjustment of the original dollar figures.

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Whereas there is a discernible difference in emphasis in stock planning, the really significant discovery would seem to be that neither desired assortments or desired ratios are ignored in the final decision. There were no organizations in which the decision with regard to proper assortments was made without consideration of merchandise ratios, and there were no cases in which inventory objectives were based solely on a consideration of desired merchandise ratios. There appeared to be no single factor which was regarded as decisive in the planning decision. When a physician examines a patient, he weighs all relevant aspects of the person's health, viz. temperature, pulse, blood pressure, etc., in the process of deciding upon proper treatment. It is apparently in much the same frame of mind that the merchandise managers in each of these chain organizations weigh the various aspects of their inventory position in making their decisions on inventory objectives.

THE ASPECT OF CONTROL

Plans, of course, are only one part of these systems of inventory management. In order to achieve in practice the inventory balance which has been defined in the merchandise plan, it is necessary to regulate the merchandise investment as nearly as possible in accordance with the objectives and limits prescribed in the plan. For to the extent that the actual inventory investment does not conform to that set forth in the merchandise plan, planning becomes a rather meaningless exercise.

Proper balance between stocks and sales is affected by the volume of sales and by both the amount and composition of subsequent purchases. Since purchase appropriations are made on the basis of forecasted requirements, they require constant adjustment to keep them in line with actual sales. By consequence, it is necessary to supervise carefully the scheduling of purchases both in terms of timing and in terms of value and composition.

Control over the timing of purchases is exercised in all ten organizations by means of the familiar open-to-buy technique. Since the characteristics and operation of this type of control are widely known, there appears to be little need to discuss them here. Controls over the value and composition of purchases are predominantly of the unit type. To assure that merchandise acquisitions will be so determined as to keep the quantity of each item on hand in a suitable relationship to its sales possibilities, it is necessary to have detailed information on a unit basis. How much detail is needed varies of course with the kind of merchandise and the nature of demand for it.

Despite many procedural variations and differences in mechanics, the techniques of unit control used by these organizations are of two general classes: those in which the focal point is an analysis of sales, and those in which the focal point is an analysis of stocks. In controls of the former class, sales by units are obtained directly by means of tickets, sales checks, cash register tapes, tally sheets, or some other similar device. Depending upon the merchandise department, this information may be recorded in terms of simply price line and classification, or in terms of size, color, style, material, vendor, or other characteristic. In most instances sales data are used to maintain a perpetual inventory. In others it is used merely to keep a current record of the activity of different items, and the stock on hand figure is found by taking periodic physical counts.

The kind of control in which the focal point is an analysis of stocks seems to depend primarily upon the physical inventory. Typically, the only records maintained are those of stock-on-hand and purchases. The sales figure is derived from the stock records by subtracting the ending inventory from the sum of the beginning inventory and purchases. While the unit information provided may be as detailed as that in the perpetual inventory, sales information is of course only available at the end of each stock count period.

The problem of maintaining the quantity of each item of the stock on hand in the desired relation to its sales possibilities is affected both by the kind of merchandise and by the circumstances under which it is sold. From the standpoint of the kind of control which is needed, merchandise carried by department stores can be separated into one of three major categories: basic stock, fashion, and warehouse items. Basic stock items are those for which there exists a settled market and which by consequence are reorderable over a long period of time. The chief concern in controlling this type of merchandise is that of maintaining the stock of the various items in a "never out" condition. While a basic stock that is too heavy can be "worked off," one that is too thin can spell lost patronage.

In the case of fashion items, the important consideration is the timing of the stock purchase. This merchandise typically has a fast turnover and a limited selling season. By consequence, controls must provide for the greatest possible speed in recording sales. Speed is essential so that popular items will be reordered promptly and unpopular ones will be detected early in the season. Warehouse items include all types of merchandise sold from samples, the inventories of which are usually carried in the retailer's

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warehouses. The chief concern in this case is that of keeping the departmental managers informed at all times as to which items are in stock and available for delivery.

While unit controls are used throughout these ten organizations, there is virtually no instance in which the same kind of unit control is used throughout the same store. Generally speaking, the control techniques in use are designed to cope with one or the other of these basic operational needs. Since the operational needs and problems tend to vary from one classification of merchandise to another rather than from one store to another, there is a great deal of similarity in the controls used among the stores of these ten organizations. For the most part, controls over basic stock items are oriented about stock counts or a combination of stock counts and sales information. In the case of fashion and warehouse items, the perpetual inventory is the most frequently used means of control. The significance of this is the recognition on the part of management that the need for control varies and need should determine the choice of a control technique.

CONCLUSION

Throughout much of the rather voluminous literature on the inventory problem, merchandise planning and merchandise control are discussed as related but distinct functions. It is significant that in ten of the nation's leading retail organizations merchandise plans and control are regarded as a single function. Merchandise planning must of course precede merchandise operations in order that these operations will have focus and direction. But merchandising activity, as it is tracked and reported in the control records, is immediately reflected in the dimension and character of plans. For this reason merchandise controls are indispensable to the development of merchandise plans. Indeed, techniques of inventory control cannot be regarded as adequate unless the merchandising data they provide make possible more effective planning. This principle is clearly reflected in the prevailing practice of thinking in terms of a system of inventory management rather than in terms of merchandise planning and merchandise control as separate activities.

It would seem self-evident that all retail establishments face the problem of maintaining stocks in sufficient quantity to meet consumer demand and of keeping these stocks fresh enough to attract this demand. The condition of balanced inventories therefore would appear to be a common goal of retailing management. While the findings of this research pertain only to large department

store organizations, it seems reasonable to speculate that managerial practices and systems which are used effectively in these stores might be applied successfully in other areas of the retail trade.

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THE APPLICATION OF STATISTICAL QUALITY CONTROL TO THE FIELD WORK OF AUDITS AND SURVEYS

SOLOMON DUTKA*

Audits and Surveys Company, Inc.

IT is a pleasure to hear discussions concerning the application of experimental design to new techniques in marketing research. I am particularly pleased that the decisions of motivation research are based upon data secured through sound statistical and experimental design, rather than by some, unfortunately, currently popular but totally unscientific methodologies. For consistent with sound experimental design is the application of statistical quality control to the field data derived.

Statistical quality control is generally associated with the manufactured product. Historically, it originated and has progressed rapidly in this area. Its origins and continued applications are related to the physical nature of manufactured products and the need for adhering to given specifications in their production.

The primary product we deal with in marketing research and that we at Audits and Surveys Company sell is "information," a form of service. The value of this product to business is conditioned by the amount of measurably reliable "information" we can provide. Since business utilizes the data (or product) derived by marketing research as part of its own decision making

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process, it is our responsibility to provide management with specifications as to the quality or reliability of the information we provide. Or, we must so design our manufactured product, (information) *a priori,* to meet management's requirements in the decision making process. We can achieve these alternatives by the application of standard statistical quality control techniques. Mathematically, the procedures are identical with those used in manufacturing. Their application and interpretation are not.

In producing our product in marketing research, quality evaluation procedures can be applied at various stages in its production. Quality evaluations can be applied to the sample design and subsequent achievement, field work, coding and editing, punching and tabulating, and often to the analysis and interpretation itself.

A great deal of progress has already been made in the design of sample surveys to provide "information" in the mathematical sense—within specified measures of reliability. The mathematical models which underlie these designs can be practically achieved in the field. The area I shall concern myself with today is some specific applications of quality control techniques to field work. This is a part of the general category of "response errors" among the possible errors in sample surveys which Dr. Deming enumerated and reviewed in detail in an article a number of years ago.

Current, forward-looking research in large scale sample surveys today is focused on this problem of response. There are innumerable examples in large scale sample surveys or retail store audits in which the "response error" completely eclipses the sampling error.

In designing a quality control procedure for the field program, we must first decide what the unit of measurement should be. The unit may be some form of information. It may be (1) a question, (2) a section of a questionnaire, (3) an entire questionnaire, or (4) it might be "all work done by an interviewer over a certain period of time." The nature of the particular survey, that is a one-time survey or a repetitive survey, helps determine which unit of measurement we may want to deal with.

In a recent large scale wage survey which we conducted among certain types of manufacturing establishments, which is currently being used in a test case before the Supreme Court, we followed the procedure of setting up criteria for acceptance or rejection of an interview on the basis of a number of critical items collected in the survey. Three items were considered to be of outstanding importance in the quality recall. There were (1) in or out of scope determination of the establishment, (2) total employment in

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the establishment, and (3) the established minimum wage rate. Subjectively, an error under criterion (1) was considered a basis for complete rejection. In the second and third items, we used the criteria that if the data reported were in error by less than 10 per cent, they were accepted and if more than 10 per cent, they would be rejected.

It may be well to point out that a quality control recall does not necessarily provide the correct answers or data. In a quality control call-back we assume that the response obtained by the supervisor in the field is more accurate than the response in the initial interview because it is conducted by a more experienced interviewer. This is also true of quality control programs in manufacturing.

As I indicated before, various field quality control programs can be used. In the wage survey that I referred to a moment ago, the importance of the data being collected necessitated the use of a separate control program for that survey. In our repetitive surveys, we try to maintain the interviewer under control. This is a form of "process control" where the interviewer is the item being controlled. The program operates in the following way. Interviewers are selected at random during the year. A sample of the interviewer's work is then selected and quality call-backs made by our field supervisors. If the interviewer's work is found acceptable then the interviewer is under control, if not, she may need retraining or replacement.

In both the process control and the individual survey control, we have set up a very simple sequential plan for the field division of our company. Figure 1 indicates acceptance or rejection regions and the number of interviews involved. Its administration in the field is quite simple through the use of the cumulative type form in Figure 2. The field supervisor redoes the interview and enters a zero or one, depending upon whether the interview is accepted or rejected. The results are accumulated until an acceptance or rejection region is reached.

The field quality control program for the audit work we conduct as part of the national total market Audit is done in a similar fashion. Basically, it consists of (1) selecting the field auditors for re-audits, (2) selecting a sample of their stores for re-audit and, (3) evaluating the audit work using a simple sequential sampling scheme based upon the previous table.

Figure 3 is the reconciliation table used in the re-audit procedure. The supervisor conducts a re-audit at some subsequent period covering the same product categories and items audited by the field interviewer.

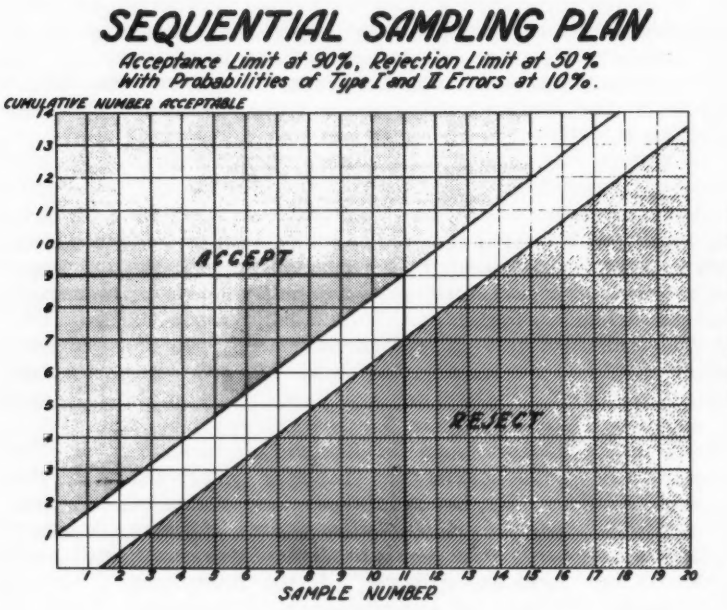
SEQUENTIAL SAMPLING PLAN
Acceptance Limit at 90%, Rejection Limit at 50%
With Probabilities of Type I and II Errors at 10%.
CUMULATIVE NUMBER ACCEPTABLE
ACCEPT
REJECT
SAMPLE NUMBER
Audits and Surveys Company, Inc.

Figure 1

Allowance is made for differences due to the time lapse between the close of the audit and the re-call check. Using the reconciliation table provided after making allowances for subsequent retailer purchases during the elapsed time period, the audit and re-audit totals should reconcile. Tolerance limits are set for variability in the two reconcilation figures. In addition, any reasons for the non-acceptability of the re-audit are set forth by the supervisors. These are quite important for possible re-instruction or re-training of the interviewers. Figure 4 is a copy of the field supervisor's report sheet.

Variability between interviewers as well as between a single interviewer's work may not be representative of their work. However, on the basis of repeated sampling of all interviewers' field work, we can establish an over-all average of audit work in the field. Table I is a Quality Control Check of a Sample Census of Retail Distribution. In this retailer distribution study we were

AUDITS AND SURVEYS INTERVIEWING SERVICE

QUALITY CHECK FORM

PSU _____ JOB # _____

INTERVIEWER BEING CHECKED _____
(Name)

Final Rating ☐ Accept ☐ Reject

No. of Check Interview	Date	Rating	Cumulative Rating	Decision Limits	
				Reject	Accept
1				-	-
2				0	-
3				1	-
4				1	4
5				2	5
6				3	6
7				4	7
8				4	7
9				5	8
10				6	9
11				7	9

* Acceptable - 1
Not Acceptable - 0

SUPERVISOR _____

Figure 2

concerned with the presence or absence of certain categories of retail products in a national area sample of *all* retail outlets. In addition, we were concerned with the presence or absence of given brands of merchandise within these product categories in those retail outlets which were found to carry the product category in the enumeration.

AUDITS AND SURVEYS INTERVIEWING SERVICE

PSU _____ DATE _____

STORE # _____

INTERVIEWER _____ SUPERVISOR _____

RECONCILIATION TABLES

	AUDIT		RE-AUDIT	
	xxx		CLosing Inventory	
	xxx		Purchases After Closing Inv. of Audit	
Closing Inventory			Adjusted Closing Inventory	
Sales			Sales	
Reconciled Total			Reconciled Total	

COMMENTS: _____

Figure 3

AUDITS AND SURVEYS INTERVIEWING SERVICE

FIELD AUDITOR QUALITY CONTROL WORK SHEET

REGION _____ DATE _____

PSU _____ JOB # _____

INTERVIEWER _____

A. No. of Stores Assigned _____ All Stores Cooperated? _____

B. No. of Stores Re-Checked _____

Full Cooperation not Received in Store(s)? # _____

_____

Store #	Field Dates	Product Class Checked	Inventory Data	Purchase Data	Computation	Store Manner

COMMENTS:

_____

_____

_____

_____

_____

_____

SUPERVISOR _____

RATING THIS PERIOD		
Acceptable	Not Acceptable	Replace

Figure 4

The quality control operation in the Audits and Surveys Company is not a behind-the-back kind of check. Our interviewers are regularly informed of the existence of such a program and that it is needed to evaluate the field collection work just as the sampling reliability is checked. There is apparently little resentment on the part of the interviewers. On the contrary, interviewer reaction

Table I

Audits and Surveys Company, Inc.
Rockefeller Center
New York, N.Y.

Fourth Distribution Study

Quality Control

SUMMARY EVALUATION

			Products				Brands		Brands and Products		
PSU	Seg. No.	DF No.	No. Missed	No. Missed x 3	Total No.	Total No. x 3	No. Missed	Total No.	Σ No. Missed	Σ No. Total	% Missed
121	012		listed as zero segment where carried stores Reject								
121	024	1-01	0	0	0	0	0		0	0	0.0
		1-03	0	0	0	0	0		0	0	0.0
		1-05	0	0	0	0	0		0	0	0.0
		1-08	0	0	0	0	0		0	0	0.0
		1-10	0	0	0	0	0		0	0	0.0
		1-12	0	0	0	0	0		0	0	0.0
211	025	1-01	0	0	11	33	0	19	0	52	0.0
	040	1-04	1	3	9	27	1	17	4	44	9.1
		1-08	0	0	2	6	0	0	0	6	0.0
	067	1-07	0	0	15	45	9	73	9	118	7.6
	082	1-21	0	0	13	39	2	30	2	69	2.9
513	007	1-01	0	1	0	3	0	1	0	4	0.0
	013		zero segment and ok								0.0
514	014	1-16	0	0	1	3	0	1	0	4	0.0
653	001	2-02	0	0	20	60	4	182	4	242	1.7
		2-01	0	0	13	39	8	42	8	81	9.9
		3-03	0	0	1	3	0	1	0	4	0.0
		3-21	0	0	12	36	5	45	5	81	6.2
		3-22	1	3	9	27	1	17	4	44	9.1
911	015	1-07	0	0	1	3	0	3	0	6	0.0
	033	1-02	0	0	13	39	1	25	1	64	1.6
	048	1-07	0	0	17	51	4	52	4	103	3.9
	057	1-03	0	0	4	12	0	9	0	21	0.0

has been that work must be quite important to justify call-backs—and we feel it has undoubtedly given rise to more careful work.

The supervisors conducting the call-back have not encountered difficulty with respondents. By and large, they have been quite cooperative and impressed with our efforts towards attaining accurate results. The re-interview also provides an opportunity for obtaining respondent reaction to the original interviewer.

Quality control methods are just being applied in the survey field. We know little about the distribution of response errors or the relative magnitude of different kinds of response error. It is our hope and aim that this quality control program will provide significant means for the continual improvement of our product.

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FIELD PROBLEMS FROM THE RESEARCH MANAGER'S POINT OF VIEW

BEE ANGELL*

Bee Angell & Associates, Inc.

THIS discussion will be limited to two important problems. It seems only fair to tell you now at the beginning that I am not going to give you the solution to these two problems. I'm only going to state them because I do not know what the real solution is. But since I live with them every day, as do most other people in my position, a public airing may serve a useful purpose for all of us engaged in Marketing Research.

The two problems are the steadily mounting costs of field work and longer and more difficult interviews and field techniques. The two problems are related, as I will illustrate for you later in the paper.

Almost every business today is faced with steadily mounting costs. You read in the newspapers daily about increases in the cost-of-living, in the size of the budget, in all costs, and if you read the annual profit and loss statements of our big corporations you will find one situation that seems to be common to many; sales are increasing but are not matched by the same increase in profits, because of higher costs.

Thus the fact that the costs of field work is increasing is not startling news, but some of the problems that higher costs present to us and some of the underlying reasons for these increases are worthy of examination.

There are two obvious reasons why the costs of producing goods or services must be kept as low as possible: First, if you don't keep your costs down your competitor will get the business, and second, when costs get too high, the consumer won't buy. The goods or services cost more than they are worth, and you price yourself out of the market.

**Bee Angell* has operated Bee Angell & Associates, Inc., since 1942. Previously she had worked as an interviewer and supervisor for Clark-Hooper Inc., and as Field Staff Director of C. E. Hooper, Inc. She was an Instructor in Marketing Research at Washington University Evening School in 1946, and at Loyola University, 1950–1951.

There is a less obvious, but very important problem which increasing costs present. That is the one of determining what costs will be on a rising price scale. People who analyze the reasons for business failures agree that the greatest single cause for such failures is inability to determine costs. If you don't know, almost exactly, what it will cost you to produce either goods or services in advance of the time they are sold, you just can't operate a business. This applies whether the business is a one-man hamburger stand, a corporation that produces a million units of product a year, or a research service such as mine.

Perhaps you are saying to yourself "Yes, it makes sense that you must know your costs, but what's so hard about that? It should be simple enough." I would like to illustrate for you exactly how difficult it really is in one phase of my own business, field work. This is a situation, like so many others in business, in which hindsight does you little or no good. It's foresight you must have. This is because, like me, the client must know what his costs will be. Before the client will buy your services, and before his management will OK a research project, one question that has to be answered quite precisely is "What will it cost?"

These are the elements that are usually involved in the cost of field work:

> Office Time—including planning time; contacting of field staff; writing instructions for supervisors and for interviewers; editing of completed interviews.
>
> Field Supervising Time—including recruiting of workers; making arrangements for any special facilities that may be required such as store cooperation, meeting hall, etc; instructing and training interviewers; verification of interviews.
>
> Interviewing Time—including training for the job; locating of respondents within the sample pattern and making the interview.
>
> Travel Time—the time and mileage that will be required by the supervisor and the interviewers to set up the job and get to the required respondents.

Normally, what we have to work with in estimating the time that will be required for all these field work elements is a job description that gives sample requirements, describes the

procedure required, and the number of interviews, the questionnaire or recording form that will be used—and experience.

Sometimes, but all too infrequently, we are able to pre-test a questionnaire, to determine the length of the interview. Usually, we must make our cost estimates from educated guesses as to time requirements for the field phase of the job without an actual experience with the job materials.

When the job follows a "standard" procedure, such as auditing sales in a panel of supermarkets, estimating costs are not too difficult, especially if you have experience to guide you. However, other than research projects that do use such "standard" procedures the rapidly changing, and more difficult techniques that are being used in the field today are almost impossible to estimate as to time requirements.

One of the reasons for both the increasing costs of field work and the difficulty in estimating these costs is questionnaires that require an hour or two or more to administer and which employ highly technical psychological techniques. According to one of our supervisors, an interviewer needs the following qualifications to successfully cope with such an interview situation—the honesty of George Washington, the guile of Machiavelli, the wisdom of Soloman and the patience of Job. Such a combination of virtues is not easy to come by.

No longer can we expect to recruit and train a crew of housewives and entrust them to handle efficiently a questionnaire that embraces open-end questions, differentials and other psychological techniques and a host of classification data. After all, it took the psychologists who devised the questionnaire and who will analyze the results many years of training to learn this sort of thing.

If we are realistic at all, we must look more and more to the highly skilled interviewer and we are going to have to pay more for her knowledge and training. When we are either unwilling or unable to use the more experienced interviewers for this type of work we must expect that the untrained will either do poor work or will learn on the job. Either is costly.

The long and difficult questionnaire also presents serious problems in obtaining respondent cooperation. The majority of people are flattered when we ask their opinions and if an interview is reasonable in length we are welcomed. But they are frank to express resentment if it appears that they are being inordinately imposed upon or if they suspect that their privacy is being invaded.

Often respondents can see no sense in completing sentences

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about a product in which they have no concious interest. The idea presented by a series of differentials may baffle them completely or bore them utterly. The classification data requested may very well offend their understandable sense of privacy. Such situations can all too easily lead to antagonism on the part of the respondent and nervousness on the part of the interviewer.

Under such conditions many respondents will either refuse to finish (in which case we will have wasted completely the time used up to that point) or will become so restive that the opinions they express cannot possibly reflect their actual attitude. They will tend more and more to say something like "Oh, put down anything you like. . .or how would I know that?" It is my opinion that these people will never admit us to their homes again.

Another reason for increasing costs of field work and the difficulty of estimating these costs is the element of plain fatigue. This is a factor to which both respondent and interviewer are subject. It is reflected on the part of the respondent, if not by actual resentment, by increasingly off-hand answers or downright evasions. It is reflected on the part of the interviewer by errors and omissions in reporting and incorrect application of techniques. Furthermore, many interviewers are so exhausted by interview situations that are so taxing on both her and her respondent that she finds it impossible to work more than 5 or 6 hours a day. Under these circumstances she cannot be seriously criticized if she turns in her time for a full day's work, although she actually put in less hours.

Our requirements for more skilled interviewers to work under more difficult circumstances put great pressure on the field supervisor. It is her job to recruit and train interviewers and see that the work is done properly. She must find workers, capable of performing the high type of work that I have been describing, who are willing to accept a wage scale no higher than that of unskilled household help or common laborers. I believe that I am safe in saying that the "going" rate for interviewing is $1.50 per hour and that $2.00 per hour is tops. In my opinion, we are getting the biggest bargain in the labor force at those rates.

The field supervisor must find these workers at this rate of pay, instruct them in how to do the work, meet an inflexible deadline and watch costs at every step, and she gets tired too. I am indebted to some of our fine field supervisors for their opinions on this subject and have quoted them at length.

Other problems covering the complexity of setting up the test itself increase costs. Our supervisors are called upon to do a variety of tasks that are fairly far removed from the definition of

supervising. For example, recently one of our supervisors was asked to purchase 840 units of the product for a huge taste test. Not only did she have to buy a small number of each particular product in different stores, but after running out of stores in her city, she was asked to drive to another town 50 miles away to complete her buying. Of course, the product had to be kept refrigerated at all times, and each unit had to be coded with fingernail polish—so she had very little enthusium left for arranging the complex taxi cab schedule to bring the 210 respondents to and from the test.

Another taste test we did involved a product that is normally eaten as a side dish at a noon or evening meal. Needless to say, the supervisor had to be pretty clever to convince homemakers to come and taste this product at 9:00 A.M., and, in some cases, as late as 10.00 P.M.

Then there is the case of the distraught supervisor who couldn't complete her quota in a taste test, because one of the respondents had a dog that ate the second sample while his owner was lauding the virtues of the first sample. And as it always happens—all extra samples had been used.

All of these factors that bear on costs in the field, which I have been discussing, also apply to the work necessary in the office. It takes longer to set up a complex test, write instructions and edit a long questionnaire than a short one. And it costs more for that reason.

I think all of us engaged in marketing research must face up to the fact that the more difficult and complicated are the field techniques, the more our field work will cost and the harder it will be to anticipate those costs.

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TRIALS AND TRIBULATIONS OF AN INTERVIEWER

ESTHER LOTZ*

Ohio Field Service

I HAVE a few words to say about the problems of the field. You may have cause to question the phrase "a few words," but my sense of time has been considerably dulled by many years of assuring a respondent that the interview in hand, which requires close to an hour, will take but a short while.

As a matter of fact, I have a few kind words to say about this same respondent. My motives are not wholly altruistic, even though I do dislike to see advantage taken of nice people—and a surprising majority of people are nice. From a business standpoint I am very much concerned with the care and feeding of respondents, since, fundamentally, that is what I, and all other interviewers and field services, have to sell.

Unless more thought is given to making an interview interesting to the respondent, rather than a personal favor to the interviewer, we are inevitably going to exhaust our raw material—the cooperative respondent. A decade or so ago, being interviewed was still a novelty. The average person was rather flattered to have his opinion asked on most anything. Today the picture is very different. Many people have been interviewed a number of time, the novelty has worn off, and some of them have become so professional that on the usual structured interview, with drop questions, they are quickly able to discern when to say "yes" or "no" so that no further questions will be asked. More and more respondents ask what they are going to get for all this, and logically they are entitled to something for their time and trouble. Putting myself in the respondent's shoes, I know that unless I were connected with this business, I would never hold still for a lengthy, boring

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**Esther Lotz* has operated the Ohio Field Service, Cleveland, for about ten years. Previously, she had spent ten years in the public accounting field and holds a BS degree from Ohio State University.

interview on some subject of no particular interest to me when not even token payment was offered for my time.

Is it necessary for an interview to be so boring? In my estimation it isn't, but in many cases there must be a change of approach to the problem. More thought should be given to the type of product or opinion and its relative importance to the average person. For example, I doubt that we are getting very accurate information on many studies, because we attempt to obtain facts at the wrong time. It is highly improbable that anyone, including ourselves, dwells at length on the motivation behind almost any 49 cent purchase. Asking questions about it six weeks after the purchase seems very foolish to the respondent and encourages a flippant answer. On the other hand, the average person will make a real attempt to decide why he picked one item instead of another at the moment he pays out that same 49 cents. Studies involving relatively cheap, everyday, similar items should be done closer to the point of purchase.

On products that people do think about, certainly those involving considerable money, more thought should be given to the open-end question which can be made interesting to the respondent. He would be allowed to express his opinions freely without the present pressure to restrict his answers, because of the too highly structured questionnaire. It is very convenient, statistically, to have a "yes" or "no" to tabulate, but if too many of these "yesses" or "no's" are qualified, of what real value are these statistics? Wouldn't it be a lot more accurate to take the person's real feelings and then intelligently code for this variation?

Use or placement studies are, by and large, better than most we have to contend with today and the respondent, at least, does get a product for her trouble. They are simpler to set up, since generally the problem is a comparison between two or more competing products. A structured screening questionnaire for the original placement is desirable, since one is primarily interested in establishing some usage of the product before placing.

However, I would favor more open-end questions on the recall than is the usual practice. Many times at this point, if the interviewer were able to get the respondent talking, rather than concerning herself with filling out a five-page questionnaire, we would all be better informed as to the respondent's real ideas. So much information that could be obtained in the field is lost in a landslide of X's in boxes. Even though such information does not always concern the specific problem at hand, if there were more contact between the field and the ultimate client, some of the extraneous information we pick up could be very interesting to him.

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To illustrate; very often the purchaser of our service is an advertising agency. Its natural concern is to determine the best way to advertise a product of their client so that increased sales will result. This is a very normal premise for a field study, but when we get in the field we may find that some minor thing about the product itself is irritating. If we were able to pursue this line, we might find what improvements in the product itself would make it more desirable. Although this has nothing to do with advertising *per se*, it seems a waste of valuable information to make no effort to record the respondent's feelings about the product. In the long run, it seems to me, an agency that offered this type of a plus benefit to their clients would be regarded as a real member of the selling team, rather than an idea factory that should turn out a new gimmick every so often to sell a product.

I would like to suggest that, if properly handled, some basic research could be done at the same time that we are determining the life span of a safety pin. As anyone who has had much to do with retail selling recognizes, there are such things as "buying days" which do not follow any established pattern, such as pay-days, end of the week, before a holiday, etc. Actually we are a long way from really knowing why people buy what they buy. As an example, based on nothing but imagination, wouldn't it be nice for the automobile manufacturers to know that more people ask for blue cars when the sun spots are very active? While this is in the realm of fantasy, it points up the possibilities of a more mundane type of information that at present is going to waste because research has not bothered to organize itself to obtain it.

Since all the information that is used for further tabulation, analysis and recommendation must be obtained at the point of contact between the respondent and interviewer, and since no final report could ever be any better than the original information on which it is based, it seems to me that two of the most vital cogs in the consumer research team are the respondent and the interviewer. They carry a load of decisions involving considerable sums of money on their backs with little or no status as members of the working team.

The secrecy generally surrounding a study that comes into the field is a rather ridiculous situation. Even the army knows that the boys in the front lines are much better fighters when properly indoctrinated as to what they are fighting for. Yet the usual policy of research towards the interviewer is to give her just as little information as possible. I believe the theory is that she will, therefore, be unbiased. The fact that she will also be very uninterested and often uninteresting to the respondent escapes attention.

One of the prime requisites of a good interviewer is real basic curiosity. An experienced and competent interviewer is so interested in the other person's opinion that this interest will always supersede her own ideas. If competent field people are used, this bias bogey becomes a real myth.

I have found that it is worth my while to run a few tabs on jobs that are interesting, in order to have some facts and figures with which to intelligently discuss the job with my better interviewers. When a job leaves Cleveland, that is the last we will hear of it, unless, of course, something is wrong. This lack of contact with any final results is a deadly and discouraging vacuum to any intelligent interviewer, and over a period of time, tends to result in a preoccupation with getting pieces of paper filled out, or worse.

My accounting background pounded home the idea that if I installed a bookkeeping system and someone managed to embezzle over a period of time, my system was at fault. I feel the same way about the interviewing business, I should operate it in such a way that it is easy and interesting to be honest and very difficult to be dishonest. But let me add that I, too, have been fooled. I am in a constant battle to keep my batting average fairly high, primarily because of the pressures applied at the other end. The national malady that speed is of itself progress, seems to have settled with a vengence on field work. I grant that some time limit or deadline needs to be set up, but I also know that unrealistic deadlines encourage cheating of the worst sort, the kind that is difficult to pin down. You just don't ask that follow-up question that might have produced something important and no one is the wiser, because the entire study would have to be repeated to find this type of cheating. This emphasis on speed, lack of information on the basic problem, and lack of thoughtful consideration and payment for the respondent's time, make good interviewing a difficult business.

A competent interviewer must have an assortment of skills not generally recognized in the business. She or he must be tactful but aggressive, pleasant but businesslike, and sufficiently intelligent to adjust easily from an economic A to an economic E without fawning in the first situation or looking down her nose in the second. I might also add that a strong pair of arches and an equally strong back are desirable attributes for endless walking and packing of exhibits, materials, placements, etc.

Just one brief example of an actual field problem. We were conducting a study on perfume. Each interviewer was issued a tin tray bought in the dime store as part of her equipment. During the interview she was to give this tray to the respondent and have

her go to her boudoir and bring back all her perfumes so that the interviewer could make an actual inventory. The old timers were able to come up with a surprising number of inventories, but I can assure you, only because a great deal of experience teaches you to approach ridiculous requests such as this in a light vein, and with the average person you are able to make it appear sufficiently humorous so that she cooperates. You should also consider the scene at the door, the tray was too large to hide and the initial impression was that the interviewer was selling pots and pans, and of an inferior quality at that.

When you consider the things interviewers are asked to do, it is little wonder that they feel so strongly about research's insensitive attitude towards the respondent. They would have to be very calloused people, indeed, not to mind this basic mistreatment of a fellow human being. And, for the record, no interviewer can afford to get calloused or she would not be able to establish that rapport of song and story so necessary to get the interview at all. The only effective remedy for this situation will have to be some method of paying the respondent for his thoughtful answer. Today, practically no respondent intelligent enough to give you a considered opinion, is not aware of the fact that people are making money on these opinions. Frankly, he is resentful of the free loading by the advertising industry at his expense.

Now let me be the first to admit that not everyone who classifies himself as an interviewer is capable of the type of work I have in mind for the field. There has been considerable discussion on this point between organized field services. Much has been said and little done about establishing standards of quality in field work. However, the only effective control will, in the long run, have to be at the other end. The field services are not in a position to control every person who decides to make a little extra money by taking a few interviews. These people are generally not too efficient and, therefore, are willing to work at a cheaper rate. There are many companies that do all their work through them. While in a city like Cleveland, a top notch interviewer is generally getting all the work she wants, this activity still makes it difficult for a field service. Just one factual illustration at this point.

A while back I had an in-store product study. We were actually demonstrating and interviewing at the same time. My custom on a study of this kind is to drop into the stores for a little while each day and take a few interviews myself. For one thing, it helps the quality and honesty of the work, and for another, since we are generally on a quota with only a certain number of days in the store, I am able to step in and help. One day when I was in the store,

another interviewer from another firm came in to do a store check. Since all interviewers know one another, she came over to our booth and sat down to write. In front of my interviewers she rapidly filled out about fifteen more stores of the same chain as having everything that she had found there. Now we all know that there are variations as to products in the same chain, even though they are very often alike. In any event, she was supposed to check eighty-three stores, at the rate she was going she probably finished with ten. You can be sure that the job was sent in on time and very neatly done. I was sufficiently interested to follow-up on this one and as I had expected there were no repercussions. I imagine that, if anything, there was a certain amount of pleasure at the reasonableness of her bill, since I doubt that she would even know how long it would actually take to do eighty-three stores—and apparently neither did the research organization. One of my interviewers said after she left, "Well, that way she must be making better than $4.00 an hour," and then rather wistfully she added, "But she'll get caught." I naturally assured her that the interviewer would get caught, but I cannot honestly share her wistful hope. I happen to know people who have gone on for ten years making more money than the rest of us on this type of field work.

Since in doing decent field work it is necessary to use people with average or better intelligence, I do not feel that training people to do quality work is as serious a problem as having quality work demanded by all the people that use the information obtained from interviews. The purchasers of field work must learn to sell as well as buy quality work. I fear that it is imperative that this be done rather quickly, since the good consumer research cannot forever hold its prestige while a lot of sloppy research is using the same name.

It is conceivable that a mouse trap that looked like a mouse trap but wouldn't catch any mice could, with clever advertising, be sold for a period of time. The purchaser could excuse its effectiveness for a while—maybe he didn't have any mice, or the bait was poorly chosen, or several other possibilities which I leave to your imagination. When, however, he comes to the conclusion that this best-seller will not catch any mice, the good name of mouse traps has been serously damaged. It may be that traps of every kind will fall into disrepute. He may even decide that the old twenty-two is still the best way of killing anything. If I were a mouse trap manufacturer faced with this situation and I had a trap that would catch mice, I think I would spend a bit of time demonstrating the difference. I would interest other manufacturers in the same campaign to protect our business, which is just another

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way of saying that any industry can police its product if the top level will see and deal with the problem as the real threat that it is to their future.

Now that I have thoroughly disillusioned you in regard to the field, and I can almost hear you telling yourselves that you are not going to put much stock in field work from now on, please remember not to throw the baby out with the bath. At the present time, the field is still our best single source of marketing information, and the real problem is to improve the methods of getting this information. There are a goodly number of us in the field who want to cooperate on this improvement. We are in this business because we like it. We are trying to do an honest and competent job. We feel that the field is a tremendously important aspect of market research and that since distribution is a major problem of our day, that marketing itself is of vital importance. We are anxious to improve our little niche in the over-all program but we must have assistance from the people that buy our services. They must demand quality work based on realistic working conditions. They must take a more unified approach to the problem all the way down to the respondent, which will ultimately result in high type, professional interviewers, and my last though not least words on the subject, they must pay for it.

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EMPLOYEE VS. INDEPENDENT CONTRACTOR INTERVIEWERS

ALAN C. RUSSELL*

Alan C. Russell Marketing Research

THE Marketing Research Trade Association was set up some years ago as an outgrowth of the American Marketing Association to explore such problems as the one under discussion. As it's president, I take pleasure in presenting this report.

Historically, the problem arose with the Social Security Law. Previous to this, marketing research companies had not been concerned with this problem. However, subsequent to this law it became important to determine whether workers were employees and therefore covered by Social Security and Unemployment Insurance, or were contractors and not covered. There were mixed findings in the early days, with most holding that marketing research workers were contractors. However, there was a case in Denver where it was held that they were employees.

During and after the War, however, the situation started to take more form and although there are a number of different rulings in different states and covering different circumstances, the following findings seem to hold.

The federal government has issued a number of individual rulings to various marketing research companies. These are based upon a rather complex questionnaire which the research company fills out covering in detail its relations with the various individual workers. On the basis of the answers, most of the major companies, including our own, have a federal ruling which holds in general that marketing research interviewers are contractors rather than employees. However, this ruling indicates

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that where close supervision is exercised the relationship changes to that of employee.

In the case of the states, however, there is a wide difference in rulings. The MRTA undertook some mailings outlining the general position of the federal government and asked the states to indicate from this information how they regarded marketing research workers. The summary of these replies has been prepared by Walter Hinkle of White Plains, New York, who is the attorney for the MRTA.

Eight states held that research workers were independent contractors. These are: Kansas, Kentucky, Massachusetts, Minnesota, New Mexico, South Dakota, Texas, and Washington.

Nine states advised that they would follow the federal determination, which in effect throws these states into the independent contractor classification for most cases. These states are as follows: Alabama, Colorado, Connecticut, Delaware, Florida, Nebraska, New Mexico, Virginia, and Wyoming.

On the other side, however, there were seven states who held them to be employees on the basis of the letter. These are as follows: Arkansas, Georgia, Maryland, Mississippi, Oklahoma, Rhode Island, and Vermont.

There was a group of five states which expressed no opinion. These were: Louisiana, Michigan, North Carolina, North Dakota, and Ohio.

There were six states which advised that they would follow the common law ruling; that is, that the degree of supervision is the primary test. Arizona, Idaho, Iowa, New Hampshire, South Carolina, and Tennessee.

Vermont (included in the third group) based its decision that they were employees on the basis of this test.

There was an additional group of twelve states which applied a three-way test to determine whether the workers are contractors. The test is basically as follows: No right of direction and control under contract and in fact. Services performed outside usual course or place of business. Independently established in trade, occupation, business, or profession. The states following these criteria are: California, Illinois, Indiana, Maine, Missouri, Montana, Nevada, New Jersey, Oregon, Pennsylvania, Utah, and Wisconsin.

Maryland (included in the third group) based its decision that they were employees on an apparent lack in meeting the third requirement.

Finally, there were eight states which furnished forms of various degrees of elaborateness which would have to be filled out

in each specific case in order to get a ruling as to employment status. These are as follows: Colorado, Connecticut, Georgia, Minnesota, Mississippi, Montana, North Dakota, and Oregon.

The federal government also falls in this category requiring, as pointed out above, a rather elaborate form and supply of information to be provided before making a ruling.

New York is not listed since no reply was received to the letter of inquiry. In New York there has been a number of different rulings given. However, New York basically follows the three-phase rule in regard to the relationship involved. A number of companies had decisions in their particular case holding that workers are employees, and also a number of companies had decisions holding that workers are contractors.

From this it is apparent that there is no hard and fast rule to apply to this relationship. As a result, different companies in the field have adopted different practices. These practices fall into the following categories:

All marketing research workers are considered as contractors except in those states where the company has had a contrary ruling.

Each case is considered on the conditions of the case using the three-point rule with particular emphasis on the degree of supervision.

All workers are employees.

Our own company operates in the third fashion.

There are strong forces at work in this problem. The paper work, the tax costs and the problem of liabilities tend to make the contractual relationship attractive. (In addition, a number of workers evidently prefer this relationship, perhaps also on account of taxes and records.) On the other hand, with the general feeling that as many people as possible should be covered by Social Security and by Unemployment Insurance, there are strong pressures to increase coverage and regard these workers as employees. In addition to this, naturally there is the pressure of a taxing authority to include all possible sources within its taxing limits. Considering these factors it is my feeling that from a long-range point of view, most marketing research workers will eventually come under the Social Security and Unemployment Insurance regulations. However, this may take the form of coverage by local groups or self employment coverage. The local group or individual may well continue acting as a contractor for the national organizations.

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The MRTA is trying to explore this problem more fully and is collecting copies of the various pertinent rulings for its central files. Copies of the rulings and the letters received from the various states which are summarized in this talk are available to members of the MRTA upon request.

Part Three

The Economic Horizon

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THE LONG-RANGE OUTLOOK

MURRAY SHIELDS*

MacKay-Shields Associates

ONE of the most reassuring factors in our long-range economic outlook is that U. S. industry is spending so lavishly for the research and development activities which assure continued growth, is so carefully measuring the markets of the future on which plant and equipment expansion can be roundly based and is so industriously developing its internal managerial effectiveness to the end that every opportunity for expansion can be fully exploited. As a result, the growth potential for the next decade is simply enormous.

The new and expansionary element in this economic era is research. Ten years ago business, government and our educational institutions were spending less than $2.5 billions annually on research. By 1956 the total had risen to over $6 billions and a rising proportion of our Gross National Product has been devoted to such purposes. Research and development outlays represented .973 per cent of total Gross National Product in 1947, but in 1956 the percentage had reached almost 1.5 per cent.

The aggregate of our research outlays for the past decade has been almost $37 billions. This represents the most colossal investment in the future ever made by any nation. Innovation and invention in all prior history came in unpredictable and erratic waves as luck favored lone-wolf inventors or as business stumbled on innovations in productive processes. Now research has been organized into a predictably productive process which assures that productivity will continue to rise even from the extremely high level already attained in this country.

If, as seems likely, the percentage of GNP devoted to research

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continues to rise, we will by 1966 be investing close to $14 billions per annum in research and the total for the decade 1957-1966 will be close to $100 billions. Our people, our government and our businesses have learned that research pays colossal dividends and they are exploiting this discovery to the hilt.

The meaning of this is that this nation is not in a single technological revolution, but is in the midst of sixteen different—though overlapping—revolutions:

> A revolution in research itself, as our scientists make full use of the new electronic data processing machines, the electron microscope, atomic tracer techniques, etc., to make the research dollar more effective.
>
> A revolution in medical technology, which is lowering infant mortality, extending human life, reducing the toll of disease and is in a large part responsible for our "population explosion."
>
> A revolution in population redistribution, as new transportation and communication facilities permit the suburbanization of our population and as our industry and people move to southern areas which, with air conditioning, are tolerable in all seasons of the year.
>
> A revolution in income redistribution creating a huge, great, new middle-class market as our new technology advances the productivity and income of our workers.
>
> A paperwork revolution which, as the office is electronified, will release workers for more productive employment.
>
> A revolution in power production due not only to the development of atomic power, but to new efficiencies in the use of conventional sources of energy.
>
> A revolution in production, as we achieve the electronic automation of the factory.
>
> A revolution in distribution which is adapting itself at a furious pace to automatic merchandising, supermarkets, new techniques in packaging, self-service, TV advertising, better materials handling, etc.

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A new revolution in agriculture, as new fertilizers, insecticides, machines and chemical techniques cut man-hour costs and raise the output per acre.

A revolution in metallurgy as new techniques of resource discovery, mining and refining are applied to the old as well as the new metals which are emerging from our laboratories.

A revolution in transportation involving the jet and the gas turbine, as well as our new road system and the opening up of the St. Lawrence waterway.

A revolution in communication, as the transistor comes into application.

A revolution in education, which will be more effective and less costly when closed-circuit TV comes of age.

A revolution in the art of warfare, which is being changed fundamentally by the jet, nuclear physics and guided missiles.

A revolution in planning by government, business and banking, which, through use of the new electronic statistical machines, can now obtain adequate statistics and process them for effective planning.

A revolution in management techniques which is slowly evolving into a science, assuring that all of the other fifteen revolutions will be put to use by business to improve productivity and production.

In this environment *it is imperative that all planning and policy making by business and by private and institutional investors be carefully designed to take advantage of the profit potentialities in these sixteen technological revolutions* as they evolve from the research of the past and the future.

Of one thing we can be sure. It is that our sixteen technological revolutions provide a solid basis for a second postwar decade of continued progress, growth and prosperity. After all, any one or two of these revolutions would, in the past, have justified an optimistic evaluation of the outlook. But we are running all sixteen revolutions simultaneously.

The magnitude of the potentials for growth inherent in a period marked by so many technological revolutions is not adequately appreciated. The organizations with which I am associated have just completed an exhaustive and detailed appraisal of the growth potential for the next decade.

The general conclusion from our studies is that with reasonably full employment, the growth in the labor force—allowing for a moderate reduction in the hours of work per worker per year and a rise in productivity which is practicable in view of our outlays for research and development—will permit Gross National Product in 1956 dollars to reach $600 billions in 1966.

No allowance is made for the impact of inflation in the $600-billion figure. If we were to experience a compounded 1-1/2% per annum rise in prices—probably the best working assumption at the moment—Gross National Product in current dollars would reach $700 billions by 1966.

The vital point is that it is essential for business management and for investors to make allowance in their plans for the fact that the second postwar decade can be—if we plan it that way—another period of vigorous growth in our economy.

The sixteen technological revolutions referred to earlier are likely to play a far more important role in shaping our economic future than are most of the issues with which our economists, politicians, bankers, businessmen and union leaders customarily concern themselves.

The new element which we are introducing into our economic way of life is *sustained expenditure for organized research into productivity*. This is so far-reaching in its implications for the future as to suggest that our textbooks in economics may have to be rewritten.

Neither the "scarcity economics" of the founding fathers of the science, nor the "welfare state economics" of a later day, nor the "mature state economics" of the depressed 'thirties, nor the "new era economics" of the 'twenties takes account of the vital role research can play in accelerating growth and preventing depression. What we need is a systematic study of the economics of technology, since some profoundly important changes in monetary, tax, labor, antitrust, farm and other policies may be necessary if the "era of research" is to yield its full benefit to mankind.

Few observers appear to appreciate the extent to which our economic way of life is being revolutionized by research and technology. There is reason to believe that it is only in the sixteen technological revolutions that we will find explanation for the phenomenal growth in our economy in the past decade, for the

mildness of the two recessions experienced since the war, and for the success we have had in preventing union-induced wage inflation from having ruinous effects on our economy.

There is every reason for assuming that the potential exists for continued growth at a very rapid rate in the second postwar decade. But will the potential be realized? We have changed about everything in our economic life except human nature, and man has demonstrated an amazing ability at times in the past to botch such opportunities. Occasionally progress has been slowed by an unwillingness to appreciate or to face up to the opportunities which existed. And in many other periods, a refusal to meet the conditions prerequisite to progress has inhibited growth. Will we meet those conditions this time? To do so, we must first identify the factors which could frustrate our growth. There are not many, but they are vitally important. We will not achieve the potential—

If we have too much inflation. While a little inflation may be stimulative, too much would be obviously disruptive.

If we save too little savings, which could not help but hold expansion in plant and equipment expenditures to levels lower than necessary to have full growth.

If we permit too small an expansion in the money supply, which would subject the economy to monetary anemia.

If we have too much economic instability, for a boom and bust would set us back for years, and

If we adopt anti-business, confidence-destroying, enterprise-chilling policies by government.

A positive program for progress in the second postwar decade must therefore include the following:

A Federal Reserve which possesses the powers—and the freedom to use them—to "spoil the party" when a boom is threatened and to ease money aggressively when recession is the danger; meanwhile, seeing to it that the money supply rises over the years proportionately to the growth potential in our economy.

Deliberate recasting of our tax structure within the framework of a slow but steady reduction in the percentage of our income being channeled into government outlays so as to divert funds from taxes to savings at a time when we need colossal amounts of savings to support rapid growth.

A broad attack on the monopoly power of the unions so that the pace of wage cost inflation can be reduced.

Adherence by our government, our business and our families to policies which maintain adequate liquidity, strong finances and generally sound financial policies, and

Support by individuals, businesses and business associations of government policies which will strengthen confidence and encourage enterprise.

We have a tendency in this country to investigate everything under the sun. Most investigations, however, have a negative implication—somebody is being investigated for something. Why should we not have a broad investigation by our most competent authorities of the conditions which must be present if the colossal growth opportunities for the second postwar decade are to be achieved?

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ECONOMIC HAZARDS OF POPULATION GROWTH

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EVEN though marketing is not my own field of specialization I have a peculiar interest in it for a very special reason. Marketing has always seemed to me to be a field that bridges the gap between the abstract and the concrete—between the theoretical and the practical—in the world of economics, and I believe that such a contact is of the utmost importance for the understanding of the workings of our economic system and for the management of our practical affairs.

Although I am sure that marketing men too cannot get along without a certain measure of theorizing and abstraction in their work, I have a feeling that they tend to have their feet planted more solidly in economic reality than some of us. We find it much too easy to forget that our theoretical abstractions and esoteric statistical models are only shadows, and are not the substance of economic reality. Economic reality consists of real people and real things. It consists of the doctor, the lawyer, the engineer, the butcher, the baker, the candle-stick maker. It consists of bales of cotton, bushels of corn and bushels of wheat; of tons of fertilizer and millions of kilowatt hours of electricity; of hogs and cattle, and tons of steel and tons of coal; of automobiles and houses and television sets. These are the things that lie behind the figures that we dump into our statistical hoppers, to be swallowed up and then to be spewed out again, faceless and unrecognizable, in the Gargantuan aggregates that are the matters of prime concern to so many economists.

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With marketing men, however, it is different. It is precisely with the real people and the real things of our economic world that they are concerned—loaded as they are with all their individual differences, peculiarities, and characteristics.

Now, of all the characteristics of human beings—of people—the most general (because it is shared by every living thing) and, at the same time, the most profound in its implications for all human endeavor is the presence of an imperious biological necessity to reproduce themselves. Although we are continuously and unavoidably aware of the presence of this instinct, like a ferment, in ourselves and in the world about us, we are not always as conscious as we might be of its explosive power. I am no geneticist, no demographer, no population expert, and am therefore in no position to say anything new or original on such matters. I must content myself with figures provided by men who know a great deal more about this subject than I do. Even a very casual consideration of a few of their figures, however, is enough to arouse considerable concern in the mind of an economist.

Take, for instance, the striking statement of Dr. Karl Sax of Harvard, "Assuming that the human species began with the creation of Adam in 4004 B.C., and assuming a one per cent annual growth in the population, by 1900 B.C. it would have been nearly twice what it is today, and by the beginning of the Christian Era the entire land surface of the earth would have provided only standing room for the population."

Another statement, this from Dr. Fairfield Osborn, President of the Conservation Foundation: "During the last hundred years the world's population increased at an average rate of 10 millions a year. During the past ten years, however, it has increased three times that fast, at a rate of 30 millions a year. It is growing now about 100,000 every day."

To quote Dr. Sax again: "During 1955 more than 40 million people were added to the world's population. If this rate were to be kept up until 1965, the population of the globe would be greater by more than 450 millions—more than the present population of North America, Central America, and South America combined. At present the world population is estimated to be 2.7 billions. Within the next quarter century it will be in the neighborhood of 4 billions. It is growing at a rate of a little better than 1.3 per cent a year."

Not all areas, of course, are growing at the same rate. It happens, however, that our own country is growing at a more rapid rate than for the world. In 1950, our population was growing at the rate of 1.63 per cent a year; in 1955, 1.73 per cent. In 1960,

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because of the influence of a short baby crop in the depression, it will be down somewhat to 1.65 per cent—still well above the world rate, but by 1967 it is estimated that it will again be up to 1.68 per cent. In short, by the end of another quarter century our population will probably top a quarter of a billion persons.

How surprising this population growth really is can be imagined when we remember that in the 1930's experts were extrapolating a population growth curve that would become asymptotic to a maximum of about 170 millions in 1975 or thereabouts. No one could then foresee the gay abandon with which boys and girls, often in their early teens, would enter into the bonds of holy wedlock, nor the exuberance with which they would apply themselves to the task of reproducing the species. Thus, the natality rate that stood at about 19 per thousand in the 1930's has risen to over 25 per thousand in the 1950's. Meanwhile, the medical profession has done its good turn by keeping a lot of us older folk alive much longer than nature ever intended. Thus we have enjoyed a decline in the death rate from eleven per thousand in the 1930's to nine per thousand in the 1950's. The ratio of births to deaths therefore, is now running more than twice as high as in the 1930's—the doubling of the ratio occurring in a matter of only about twenty years. This combination of low death rates and high birth rates is now producing a population explosion of the first order. For those who are inclined to take comfort in this sort of thing, still greater developments lie ahead when the wartime crop of babies reaches marriageable age and begins to have still more babies of its own. This will occur sometime in the middle sixties. When it does, I am sure that the economic hazards of population growth—the topic I am discussing with you today—will be a matter of prime concern to all of us.

I am well aware that many—perhaps most—observers fail to be alarmed by the explosive growth of our population. A great many, indeed, actually welcome it as a beneficient development. Some of these do so on the grounds of a very narrow and rather selfish view of the problem. I am reminded of a small-town real estate dealer who listened to a talk I was making to a civic club on the financial distress many municipalities were encountering because of the rapid growth of their populations. After the talk this man came up to me and said, "Boy! This population stuff is right down my alley! If what you say is true, it's going to be grand for my business!"

On a somewhat higher level, there is a group that argues that a growing population—even a rapidly growing population—is economically desirable *per se*. Not only does the expanding population represent an expanding market for goods and services of all

kinds, but it also provides a reservoir of productive capacities that can be directed toward the satisfaction of the growing demand. Moreover, growth itself acts as a stimulant to invention and an incentive to investment, thus expanding the technological foundation of the economy.

This view certainly has a good deal of plausibility about it, and its proponents can point to some historical evidence in its behalf. We all know, for example, that ever since the industrial revolution of the late eighteenth century the population of western Europe and of the western hemisphere, particularly North America, has grown with unusual rapidity. Accompanying this growth in population there was also a spectacular rise in the level of living. That the increase in population caused the increase in economic well-being was a plausible conclusion for people, after all, it created the demand for the products of the new machines; people created the machines; and people quite logically benefited from their fruits.

This argument is not quite as simple as that of the rooster who reasoned that because the sun came up following his crowing each morning, the crowing was the cause of the sunrise. But it comes perilously close to being that naive. The answer is simple. If this sort of historical evidence is to be trusted, what can one say when confronted by the fact that the population of Asia quintupled between 1650 and the present, but the people of that continent are still living as close to the subsistence level as they were three hundred years ago? Or still sparsely-populated Africa, where the population has doubled without any appreciable increase in the level of living except in those parts that have been brought within the sphere of western civilization? I think it is quite evident that an increasing population is not enough to guarantee a rising level of living and general economic prosperity. If prosperity depended mainly on the biological activity of the existing population, all those interested in assuring the country's economic future would have their work cut out for them, leaving the humdrum business of cutting the death rate to the medical profession.

Another group of observers takes a less extreme position. They hold that although a rapidly-expanding population may create certain difficulties of an economic nature, it is not necessarily incompatible with an ever-rising level of living. With stars in their eyes, these hopeful ones look up from their science-fiction magazines to tell us that science has always found a way of solving such troublesome problems in the past and will go on doing so in the future. We can safely leave the solution of all our problems to science!

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A recent magazine article, for example, set out to tell us what life will be like twenty-five years from now, and it started with some data bearing upon our explosively growing population. It then went on to describe the wonders of that world to come—130 million motor vehicles speeding over many thousands of miles of new electronically-controlled highways, and the skies buzzing with helicopters and vertical take-off jet planes bound for the four corners of the earth between breakfast and tea-time; round houses and round bedrooms; cooling blankets and atomic heating; the morning paper at breakfast-time in color rolling out of the facsimile machine; plastic and aluminum houses with movable walls and detachable rooms; luminous ceilings and automatically closing windows, thermostatically controlled; television baby-watching service; supersonic dishwashers and washing machines; irradiated and dehydrated foods stored without benefit of refrigeration; electronic cooking and even a kitchen-sized Univac that will prepare a meal from a coded card at the push of a button; electrostatic dust-gatherers and self-operating polishers, vacuum cleaners and floor scrubbers; department store shopping via 3-D color television, with push-button service direct from the store; and shopping for the family groceries at super-super-supermarkets in which all operations from ordering to delivery will be electronically-controlled.

In the midst of a technological jungle that seems to have less and less use for her purely human services, the frustrated housewife of twenty-five years from now may be pardoned for wondering if there is anything left for her to do that she can still do better by hand than by some old-fashioned electrical or some more modern electronic gadget.

One reads on in this article with little or no indication of incompatibility between the population data at the beginning of the piece and the achievement of this chromium-plated, multi-dimensional, multi-colored, neon-lighted, and nuclear-powered paradise.

Only toward the end of the article is there a hint that even this Eden may harbor a serpent. A quarter of a century hence, the article suggests, we shall be suffering from shortages of some raw materials. We shall be ransacking the oceans of the world for food and minerals. Worse still, we shall be distilling fresh water from the sea to make up in part for the water shortage that our profligate looting of the soil will have brought upon us and which is even now becoming a serious problem in some places.

Not only will we be running out of water in another twenty-five years, but we will also be running out of land. Science will have brought yields to their virtual maximums so that little more can

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be looked for in that direction. At the same time the acreage of arable land will decline as more and more of it is lost through erosion or is swallowed up in industrialization and the expansion of urban areas into what was once the countryside. One of the dominant questions of 1982, therefore, will be that of providing enough food for the population from available resources. The nation will, indeed, be face to face with the possibility of an inadequate food supply.

Here, I believe, we have reached the heart of our problem. I think that the key to our economic future is going to be found in the long-run in the relation between the size of our population and the availability of resources in general, including food. As an economist, I am still old-fashioned enough to believe in the essential validity of some of the great generalizations of the past. Among these great generalizations is certainly that of Thomas Malthus who, in 1798, set forth the thesis that population tends to grow at a faster rate than the food supply and that, unless checked by the postponement of marriage and the exercise of a much greater degree of continence within marriage than had hitherto been practiced, the excess population would die of disease, starvation, pestilence, or would kill themselves off in war.

That Malthus' thesis did not materialize in the nineteenth and twentieth centuries is explained by a number of circumstances. The development of a more productive agriculture and the technological changes incident to the industrial revolution worked hand-in-hand to provide the material means by which the expanding population could be supported. In addition to these developments, there came about the opening of the New World with its tremendous capacity to absorb excess population from Europe and, performing the same function to some extent, the development of colonial empires. Without these outlets for its excess population, it is doubtful that Europe could have raised its level of living much, even with the help of the technological changes that were taking place. Their fruits would have been eaten up by the additional mouths that had to be fed.

One other factor also appeared to postpone the Malthusian *denouement*—this was a decline in the birth rate itself. The rising standard of living was acting as a check on population growth—a check that Malthus had not foreseen. Those who might otherwise have worried themselves over the population problem breathed easy. Malthus was proved wrong. There was no doubt that once people became accustomed to a high level of living, they became more and more reluctant to surrender any large share of their creature comforts for the sake of having a family. This seemed

to be the most solid ground for believing that economic progress would never again be threatened by a swelling tide of population.

Standing where we are today and looking forward to the future, this most solid ground for anti-Malthusian optimism does not seem so solid after all. It is precisely in the last ten or fifteen years when we have achieved the highest level of living in all history that the birth rate has turned upward and has conspired with a falling death rate to raise once more the Malthusian spectre. It begins to look very much as though it is prosperity that causes or facilitates the expansion of population rather than the other way round, as some would have it.

How about the other factors that successfully forestalled the Malthusian conclusion during the past century and a half? Obviously there are no new worlds to conquer and open, and colonial empires are rapidly disintegrating and passing from the stage of history. There are few habitable parts of the earth left capable of absorbing excess population on anything like the scale of the New World in the nineteenth century. The door of migration is virtually closed to us.

Science may still produce a few more miracles in increasing yields in agriculture. One can never say, "We have reached the end." Available evidence, however, seems to point to an approaching maximum in yields of food from land. Of course, future generations may dine bounteously on algae and plankton from the sea, but steaks and roasts will appear only in tales of a golden age long past told by graybeards to their children.

What is true of food is true in some degree of most other basic raw materials. Our rising standard of living has not been achieved without cost. It has been supported by an almost irresponsible squandering of resources. According to the 1950 report of the government's Materials Policy Commission, we were taking from the earth in that year two and a half times more bituminous coal than in 1900; three times as much copper; three and a half times more iron ore; four times more zinc; twenty-six times more natural gas; thirty times more crude petroleum. From the beginning of the First World War up to 1950, says the report, the consumption of practically every metal and mineral fuel by the United States alone was greater than by all countries in all of the preceding centuries.

It is not only our patrimony of non-renewable mineral resources that we have been exploiting in such a prodigal fashion. We have also been mining our soil, and water and timber resources at an equally suicidal rate. No wonder, then, that the Materials Policy Commission came to the conclusion that "... in

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area after area the same pattern seems discernible; soaring demands, shrinking resources, the consequent pressure toward rising real costs, the risk of wartime shortages, the ultimate threat of an arrest or decline in the standard of living we cherish and hope to help others to attain."

Anyone who remembers his sophomore economics will recognize in this conclusion by the Materials Policy Commission, the operation of an old acquaintance—the law of diminishing returns. This is the inexorable law that lies at the foundation not only of all economic theorizing, but at the foundation of the economic process itself. It can be neither thwarted nor evaded indefinitely. Sooner or later it will make itself felt. Even with a stable population, we couldn't go on forever increasing our *per capita* consumption of resources without pushing their production down to more and more costly levels of extraction or into more distant sources of supply. But to increase *per capita* consumption of resources when the population itself is rapidly expanding, is merely to speed the day when increases in the numbers of people will yield diminishing increments of product. Our particular situation is not going to be improved by the competition we will face from the expanding world population, which will also want access to the world supply of vital resources. Over two-thirds of the world's population now lives on a subsistence level. If modern technology should ever raise their level appreciably, we would find competition with them to be severe.

The only real possibility we have to postpone the day when diminishing returns completely overtake us lies in an increase in the factorial mix of capital embodying technological improvements. This, of course, we have been doing. One measure of the extent to which we have been increasing our technological capital is our annual expenditures for new plant and equipment. In terms of current prices, they have risen from 20.6 billion dollars in 1950 to 37.4 billion, estimated, for 1957. In terms of constant prices (Consumers Price Index, 1947-49 = 100), the figures would be 20.0 billions and 31.5 billions respectively—an increase of over 50 per cent.

Not all of this money, of course, goes to increase *per capita* output. Nearly half of it is required merely to replace capital that is falling out of use for one reason or another. It has been rather conservatively estimated, moreover, that it requires at least five thousand dollars worth of plant and equipment to equip a worker for his work. The annual growth in the labor force would therefore absorb several more billions of these expenditures. Only that part of our annual expenditures for new plant

and equipment in excess of replacement and absorption requirements can serve as an offset to the deteriorating relation between population and resources or to improve the economic position of the average man.

It is pertinent, therefore, at this point to inquire just how well the average person has been faring as a result of our truly heroic investment in technological captial in recent years. Considering the economy's total output of goods and services (Gross National Product) in terms of constant prices (1947-49 = 100) on a *per capita* basis, we discover that in 1950 our economy was producing an output of $1,828 per person in 1950, and $2,117 per person in 1957 (1st quarter annual rate). This represents an increase of sixteen per cent in the apparent well-being of the average person, and is a pleasant figure to contemplate.

Not all of this increase, however, is available to the individual. Government takes its share in the form of taxes. Making similar adjustments for price changes and population increase in personal disposable income, we find that this figure rose from $1,322 a year in 1950 to $1,464 in 1957 (1st quarter rate). This represents a gain of only ten per cent—a gain bought, be it remembered, by an increase of over fifty per cent in annual expenditures for new plant and equipment. Actually in the last three years there has been a decline in real per capita disposable income, the figure falling from $1,474 in 1955 to $1,467 in 1956, and now to $1,464 in 1957. Corroborating this trend, figures have recently appeared in the newspapers showing that inflation is now catching up with some of the union pay scales and that the real weekly wage is declining.

I would not want to base too much of my argument upon these figures and say that they indicate that the day of reckoning is upon us. I do believe, however, that they show that we are buying increases in our level of living at higher and higher real cost and that the glow of prosperity that shines forth in our great statistical aggregates is partly an illusion created by higher prices, and in part merely the afterglow of production that was consumed in the process of increasing the population rather than in improving the level of living for the average person.

In conclusion, let me sum up in a very brief and simple statement what I have been trying to say. I believe that Malthus was substantially correct in holding that population tends to increase faster than the means of its subsistence. Although this tendency was held in abeyance for well over a century, due to special historical circumstances that can never be repeated, it is now beginning to assert itself with increasing force. Herein lie the

economic hazards of our explosively expanding population—here, in our inability to provide out of current production for everything that this population requires in the way of consumer goods, of capital equipment, of governmental and municipal services of all kinds.

What I, and many others, fear is that these inordinate and competing demands upon our productive mechanism will create such tremendous pressure that they will seek a spurious satisfaction by way of rampant inflation. This would be an evil worse confounded. It is against this background of larger aggregates of output and income, but of less rapidly increasing, or even of decreasing, individual shares in them while over the entire scene looms the threatening cloud of monetary inflation that marketing experts must envisage their problems and seek their solutions. I suspect that each product, each locality, each firm will have its own peculiar problems to face as the general drift of affairs makes a varying impact upon them. The problems will be complex and difficult, and solutions will not come easily. It will take all the general economic wisdom a firm can muster, plus all the marketing know-how it can command, and a large measure of good luck besides, to remain afloat and to stear a steady course through the troubled waters into which I believe we are sailing.

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CHANGING CONCEPTS OF HOME BUILDING

RICHARD N. JONES*

House & Home Magazine

IN order to fully understand some of the forces at work which have so truly revolutionized our concepts of home building and our habits of living it seems appropriate to take a glimpse into the past.[1]

Those of us who grew up in the traditional middle-class home of 30 or 40 years ago remember quite clearly that dining was never much of a problem. There was a large kitchen with a table in it for the hired girl—newly arrived. She was an affable, immensely competent person, who could whip up anything from a snack to a banquet at short notice, and somehow managed to do not only the cooking and dish-washing but the serving as well.

For dining, the family had the dining room. Everyone who was anybody had a dining room! The notion of eating anywhere else would have been considered very strange indeed. Of course there was the tremendous fixture hanging on gilt brass chains, sometimes with leaded glass, which was the most ornate lighting fixture in the house. We all remember that the table cloth was not laid without first putting the folding pads underneath. As a result there was a second piece of furniture in the room—a sideboard—which of course held these pads and was really a linen closet turned on its side and set up on legs.

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1. I am indebted to our great designers, and incidentally, creative journalists in their own right, for the assemblage of a fund of information which has been most helpful to me in the establishment of new benchmarks. Without George Nelson's and Henry Wright's vision it would have been infinitely more difficult for me to have oriented my thinking to tomorrow during my three decades in this industry. *Tomorrow's House* has been invaluable in preparing my introductory remarks for today's meeting.

Over in the corner we were all quite proud of what appears strange indeed today—that great glass and wood cage, usually with an intricately carved front, behind which we all kept the real treasures of the dining room—the Sunday china, the fine porcelain pieces, and those tremendous cut-glass pitchers we now see in roadside antique stores.

All these treasures needed space, and they got space. The old style dining room was a fine thing—and let's not forget it. It was truly a family social center. This lasted, as we know, until the 'twenties when two things happened simultaneously.

First was the surge of prosperity which swept the country, from one end to the other, until 1929. And second was the fact that the maid had found she could make more money elsewhere. Then something new appeared in the middle-class house. The dining room remained, but a brand new element—the breakfast nook—was added. Sometimes as part of the pantry, sometimes as a little sunroom with a table and four chairs. This, in itself, was a sign of the general inflation going on at the time, and a very practical-functional response to the shortage of service.

Then came the 'thirties when, as Macy's put it, "It became smart to be thrifty." Suddenly a split arose in the ranks of the house planners. By now money was scarce and something had to be done to provide houses within shrinking budgets. The dining room was the logical victim. Elaborate studies were made to prove that here was a room that never should have existed in the first place—it took up too many cubic feet of space in the house and was used only three or four hours out of the twenty-four. This, they cried, was inefficient—the era of the living-dining room was inaugurated.

This, we might add, was also one of the major early problems prompting a split in the profession. The more contemporary-minded architects saw a number of rather interesting features in the living-dining room—others did not. Others, for nostalgic reasons, wanted to maintain the status quo. The contemporary group who were forced to make living rooms smaller—again because of shrinking income—didn't like this. And of course they had to provide space for eating. By using one end of the room, or perhaps an alcove for this purpose, they were able to create the illusion of more space than actually existed for general living purposes. But once the first flush of enthusiasm for the new idea began to wear off it became obvious that here was no millennium. The living-dining room was a makeshift, frequently satisfactory to be sure, but nevertheless an expedient to save space and money. Moreover the kitchen was now next to the living room, and the clatter of dishes being washing came through the door so clearly that people began to wonder why they bothered to have a door.

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This brings us almost to today. As far as the middle-income family is concerned, the maid-of-all-work is farther away than ever. Budgets are skyrocketing with income, and more and more money is being diverted from space into equipment, most of which is by no means gadgetry of a luxury nature, but machinery which must be purchased to make up for the lack of available labor.

With this background then, we find ourselves at a new crossroads. There's evidence of a growing desire to recreate certain aspects of social life within the home on something approximating the old-time basis—and all this coming at the beginning of an era of the greatest design and technological revolution in all history.

Solving the problem of where to eat, and how, and with what tools, is before us.

Interestingly, during the depression another great architect, Allmon Fordyce, pioneered at the New York World's Fair with a 3-dimensional presentation of his concept of planning to meet this problem with a proposal quite close to what we have before us today. He decided that a solution worth trying was an entirely new kind of room which he called the kitchen-living room.

Jumping another decade, these years then produced other versions of the kitchen-living room in various parts of the country. Generally the reaction was quite favorable. Somehow this new kind of space corresponded not only to an economic situation, but also to a changing idea of how to live. The snobbery of the twenties disappeared, the poverty of the thirties was overcome, and today no one thinks it strange that a housewife should do the cooking and that the guests shall help with the dishes.

We like this idea at *house & home*. We think it solves many problems which would otherwise stump the family of moderate means. But maybe you don't like it at all. What then? Who is right? The thing about houses that makes designing them so endlessly fascinating for the great architectural profession is that everyone can be right. If your life is not complete without a room devoted solely to dining, if the idea of eating in the same room where food is prepared is revolting, it's everybody's inalienable right to demand a dining room. There's nothing wrong with that idea. But we must remember that it costs more than no dining room, which brings us back to where we started—to tastes and budgets in this period of rapidly rising living costs.

And of course as we head now to the marketing aspects, they pose many more difficult problems for the appliance producer in this important period of transition from yesterday to today. They also pose real problems to the manufacturer of acoustical materials, to the manufacturer of air conditioning and ventilating

equipment, to the lighting industry, to the electrical industry, in the production of scientifically designed lighting solutions to be coped with. As Frank Lloyd Wright observes, "The basic requirement today is to provide a framework for living, not for the running of machinery, and this is the foundation upon which really successful planning must ultimately be carried out." The broader the picture of how to live, the better the plan. If this extends to an occasional snack in front of the fireplace, so much the better. It is the joint responsibility of the architect, the home builder and even the consumer, to see to it that not a single one of these small enrichments to the pattern of daily existence is omitted.

Now to the marketing problem, but first let's look at the market—as it exists—today.

People no longer build houses—they buy them. Almost 80 per cent of all the houses built last year were built for an unknown buyer. And these houses were built prior to sale by a group of merchant builders and prefabricators, whom we might, for the sake of simplified phraseology, simply refer to as the manufacturers of houses—for the people.

These are the men we must understand. These are the men whose design and production problems must be as clearly understood, as scientifically researched as other great industries now study consumer tastes when these industries are making multi-million dollar decisions. How far along are we in this direction? I think we are neophytes.

Here is an industry, now the second largest industry in America, whose annual volume of new home construction, in the area of 15 billion dollars, now exceeds the volume of all the great giants like the automotive industry, the iron and steel industry, the petroleum industry and the transportation industry. Yes, we've come a long way but there's work ahead—the challenge to prepare the housing and re-housing of America.

Just think of the new housing problem alone. Fifty-five million more people to provide for by 1976. Obviously, the solution to this problem in the 'sixties will but faintly resemble our solutions of the 'forties and the 'fifties, as that dining room fixture that hung over the family gathering of our youth but faintly resembles anything in our homes today.

What do we mean when we predict so drastic a change?

First, a review of these last three decades shows two things. As the market has shifted from the building of houses by the people to a market where we now build for the people, we observe that the single unit sale has now given way to the multiple unit sale. Second, we observe that this basic change in the marketing

characteristics of the industry has gradually led to product design changes on the part of appliance manufacturers.

One may think that the advent of "built-ins" represented a rather drastic change in product design, however it must be remembered that the trend toward built-ins really started with the advent of the Package Mortgage in 1944. The development of this new financing instrument, together with the necessary enabling legislation, changing statutes in most of our states soon thereafter, represented the real force needed to change the status of appliances as furniture to their newly-found place as permanent components of the house. Once appliances were legally accorded this new position as a permanent part of the lender's security, not to be moved in and moved out as tenantry changed, then and there the trend toward built-ins was rapidly accelerated.

Now what do we find?

Today's house includes in the package two or three times as many ranges and refrigerators, four or five times as many dishwashers, home laundries and garbage disposers as their pre-war counterparts. It's estimated that more than 85 per cent of all built-in range sales are now made as part of the new house package sale, better than 50 per cent of the dishwasher sales, and approximately the same for disposer sales. And this, we believe, is just the beginning as the industry gears itself to double production once again for the middle 'sixties and 'seventies.

Is it any wonder, in the face of these facts, that management is now concerned over the next step they must take as they view their newly-found primary customers' problems in the years ahead? By primary customer I mean of course the builder, and the builder's collaborators. Equipment costs FOB plant are always watched constantly by leaders in any industry dealing with large scale procurement. So also by this new industry called home building, where the executives of these large merchant building organizations and prefabricated home manufacturers also watch their FOB costs. But more importantly, these executives are now *more concerned* with their site labor, installation and servicing costs, which have been given far too little attention.

Home building, like everything else, is headed into a critical labor shortage that will soon force revolutionary changes in the wasteful and uneconomical way houses are now assembled from thousands of pieces at the site. The total United States labor force is increasing only about 1-1/2 per cent a year. The demand for labor in every industry is increasing more than five times this fast, and this is why every industry is straining to make its labor go further—through standardization, through automation, through mechanization.

In home building the first result of this pressure will be a major shift away from site construction. Everybody close to the industry recognizes the importance and the inevitability of this shift. The prefabricators are trying to meet it with factory prefabrication and they have already taken over nearly one-tenth of the market. The lumber dealers are trying to meet it with Lureco wall panels, Lureco window panels, Lureco floor panels, Lureco roof panels. The builders have their own pet word for it. They say they "must build with parts instead of pieces." All of them are looking to a day when there won't be a saw used on the job, because all the parts will come to the site pre-sized to fit.

One answer to this problem is the prefabricated house, bought as a package from a single manufacturer. The other answer is the components house—with the components bought from a dozen different suppliers, *all using the same standard dimensions*. Because of this sudden urgency to have everything pre-sized to fit, the dimensions of the builder's house are standardizing very rapidly.

From this we can see how important it is then for appliance manufacturers to look into the future and study plan and design trends now evident in new builders' and prefabricators' houses, to pick up clues that may possibly be the keys to assist product designers in the appliance industry.

As an example, I recently heard a major executive in this industry make the statement that he now questioned whether the term "built-ins" should be in our vocabulary—an excellent in my opinion of forward thinking in line with the observations we've just make with respect to the builder's site labor costs. Certainly the term "built-in" implies that we have to have a receptacle into which we will build something in. Why shouldn't the appliance be part of that wall rather than affixed to or built into that wall? Why shouldn't some appliances now designed as freestanding appliances, in effect become the basic units of freestanding room dividers (a wall if you will, at least a junior wall). These are but a few of the trends to watch from a product design point of view.

Now to distribution. As we have said, houses built for sale versus houses built for occupancy now constitute better than 80 per cent of our total home building potential. These houses are getting bigger—these houses are costing more. The builders of these houses in a very real sense represent new types of retailers for the appliance industry. Today the builder is really not the appliance manufacturer's customer. He is a buyer in the sense that he is responsible for sales. He buys not for his own account, but for the account of the man and woman who will make the down payment, assume the mortgage and move into the house. He buys only

what he is sure he can resell at a profit. He is interested in the price he pays only because he wants to be sure of a profitable mark-up. And as we have already observed, he now sells three times as many bathtubs as part of the house as all the plumbers in America. He sells more dishwashers, more built-in ovens, than all the appliance dealers in America. And we could go on and on and show how he sells 80 to 90 per cent of all the windows, most of the framing lumber, tremendous quantities of roofing and siding and flooring and wiring and lighting fixtures.

Therefore, from a distribution point of view, it's vitally important that we stop making the mistake of thinking of the builder as a customer, and start thinking of him as a manufacturing fabricator who's reselling our appliances as components of the bigger package he produces—the house which he must sell.

Once we make this decision, we then realize how important it is that we must now give him all the sales helps, all the sales training, all the merchandising aids, that have traditionally been accorded dealers in industry after industry who sell far less of a given producer's product than those in this giant new industry made up of today's "home merchandisers."

As we look at executives in this industry in this light, we then realize that as part of our distribution program we must also assist these builders, prefabricators, buyers, and selling organizations, with their difficult problems of financing.

How could we have had this great industry headquartering here in Detroit without an early realization on the part of General Motors that they needed GMAC? How could this industry have hit the staggering production and sales records of recent years without the trade-in market, and without problems being studied and solutions for these problems found? How could new car sales in this industry be maintained were it not for the financial instruments having been created to make the first-time buyer the prospect for the used car?

Home building today is at that crossroads. Better than 50 per cent of the buyers of new homes are today second-time buyers. The honeymoon is over. The veteran without a roof over his head has been provided with shelter. He now needs a new home. His equity is in the old home. We must solve the problem of house trade-ins and we must have financial instruments to make these sales possible.

When talking about the financial community and the important role it plays in our economy, we must also remember this fact as we formulate our distribution and sales assistance programs. Nothing—but nothing—goes into the built-for-sale house unless it

can be financed in the mortgage. That's why, if you will, air conditioning isn't getting into new houses as fast as it could and should. The air conditioning manufacturers haven't sold FHA, they haven't sold the appraisers, they haven't sold the lenders. That's why wall-to-wall carpeting isn't getting the acceptance it should have in houses. Because the carpet manufacturers haven't sold the lenders and the appraisers.

Conversely, it's the biggest single reason built-in kitchen sales were the sales WOW of last year, and are holding up so well this year. It's the biggest single reason sliding glass walls are such a selling success. Because they get 100 per cent valuation when appraisals are figured and approved by FHA. We can make this categorical statement:

> If building components aren't sold to FHA, sold to the savings and loans, sold to the institutional investors, a producer is wasting his time trying to get the builder to sell it to the consumer for him. The builder knows better. He knows that everything he puts into his house that just adds to the down payment is going to hurt his sales.

And incidentally, in today's choosy market the lender is far more choosy than ever. When anything would sell, maybe the lender didn't worry much about what the house he paid for was like, and what materials and products it contained. But today the lenders are beseiged by builders begging for mortgage money. They have to turn down hundreds of thousands of houses. As the president of the US Savings and Loan League says, "Houses built to offer a minimum of obsolescense and depreciation stand the best chance of getting mortgage money," in what the past president of NAHB calls, "today's frantic competition for financing."

So if we think of these problems as they exist now, and relate them to problems we've discussed with respect to plan and design, engineering, site labor costs, and try to relate these trends to the future, it is not difficult to see other handwriting on the wall that may vitally affect our distribution patterns.

Let's look at the prefabricator. Here we see the nearest approach to the completely integrated home building operation—an industry already producing 10 per cent of all single family houses in America, an industry already with seven thousand franchised dealers, an industry manufacturing, wherever possible, as many components as they can in their own plants. But an indsutry, of necessity at this stage in its development, already procuring thousands of appliances from outside sources to be sold by its

dealers as part of their house package sales. This industry is deeply involved in the development of more and more components for its own houses, which can easily become components to sell to the builders of any house. They've been buying windows and installing them in the walls they manufacture. Now we already have some in the industry manufacturing windows and walls as a single integral unit. Perhaps, in the course of time, the prefabricators may become volume distributors as well.

As a matter of fact, one is already quite close to announcing a program inevitably headed in this direction. I refer to a prefabricator now setting up his "building components division"—a whole new division—a separate organization from its parent—this division to sell this prefabricator's wall panels—to any buyer—windows and doors in a single panel, "Module #5," a combination heating-cooling water heater chimney ensemble, roof trusses, and one knows not what next. Certainly this division will dispose of any surplus components of any given type they may have over and beyond the needs of their own house building sales quota, and in this respect become a new type of distribution outlet.

While speaking of prefabrication let's quickly run through some other important points before getting to "Changing Patterns in Distribution."

We have already said, people no longer build houses—they buy them. This statement is based on utility reports from coast to coast. Who knows better who builds houses than the utilities who must install the service facilities? They're the ones giving us our base ratio, 80 to 20, with more than 80 per cent of the houses being built by merchant builders and prefabricators and less than 20 percent for occupancy as a composite figure. This tremendous growth in the industry has come about, as we know, because the craftsman-builder is no more, and in his place we have the businessman-builder with his team of hired, specialized architectural advisors, financial underwriters, realty sales advisors, all contriving to create the most saleable package imaginable.

These teams of men—industrialists—know that they must create a better house to entice home buyers out of their present homes (and 50 per cent of the buyers now are second time buyers), and it's these teams of men who are designing and engineering more built-ins, more integrated utility areas, more electrical and gas living services as teams.

And each member of this team is indispensable and vital to the producers of all components. The builder knows that his house won't sell unless it's well designed—the realtor won't take on the builder's project and sell it unless it's well situated, well designed,

quality construction—and these three team members all recognize that there's no possibility of their moving forward without money—that indispensable fourth team member's contribution. And finally, all of these professional groups know full well the responsibility they must assume—namely the responsibility of constantly improving our standard of living.

We know that the new house sets the style for the old. We know that the very word, "modernizing," means making the old look like the new, and unless we sell the new house first, we know we have a long and tedious and far more costly job of ever selling the old house market.

It can be said, I believe, that as marketing men we must watch developments in this new house field with a more critical eye than at any time in history, and as we watch these developments, we must study them, interpret them and act upon the conclusions drawn.

We have seen how the prefabricator is integrating more and more of his components into bigger and bigger sub-assemblies, finally combined into a package we call a house. We've seen great chains like Sears Roebuck and Montgomery Ward trying to gain a greater share of the existing house market by moving slowly, but certainly, in the direction of offering more integrated package services similar to those offered by professional building groups.

Surely all of you have seen the spread announcements by Sears in the last six months with statements like the following in the text:

> "Let Sears help you plan your new kitchen, bathroom, recreation room—transform any room from basement to attic. Sears can also install new heating or air conditioning systems, plumbing and wiring—no job too large or too small—you name it—Sears makes it yours."

Isn't this one-step modernization service a step toward filling that missing link in our sales and servicing pattern to the American consumer? They have their modernization credit plan. The buyer signs one instrument—they do the rest.

Then look at plans for Montgomery Ward, visualizing as they do now "a packaged garage, a packaged room addition for houses, rooms of many architectural styles and designs, room addition packages including panels which are pre-wired, complete with flooring, interior sheathing, plumbing fixtures if necessary, lighting fixtures"... and so on down the line.

Who's going to get there first? New house? Old house? What have you? And what about the sixties? Or even before?

Some quotations from a copy of a presentation for a mammoth home center in Dallas are of interest here:

> "The Dallas Home Center will resolve for the first time the sales-smothering, impractical (and, often, impossible) hodge-podge traditionally facing the customer while, simultaneously, solving economic and operational uncertainties plaguing the sub-contractor, contractor, merchant manufacturer and those in allied fields of endeavor. The Dallas Home Center's communications system, from factory to end product (the home), will bridge one of our most serious shortcomings."

From a marketing-merchandising-distribution point of view this brochure goes on to say:

> "Sub-contractor: Instead of an isolated, individual location, as in the past, the Dallas Home Center sub-contractor will find himself at the main stream of the home-buying public's attention, with walk-in business at a continuing peak. The Center's plan provides for attractive sub-contractor office and display space, immediately adjoining reasonably-priced shop buildings with loading docks and truck parking."

The home building products merchant has the same facilities. The manufacturer is provided with strategically located offices for district sales representatives and for others in endeavors allied to home building, furnishing, improving and financing. Even an auditorium is provided "for the training of salesmen—a most pressing industry problem—and for every type of trade meeting," as pointed out in this brochure.

This center is intended to answer the industry's cry for "communications." It is a prime communications center in the great southwest to be built at a cost of more than $3 million dollars to provide adequate channels from manufacturer to distributor to dealer to builder, and from industry to home-buying public.

What projects like this and others to come lead to will depend to a great extent on the initiative, the wisdom and the long-range planning of the marketing executives in our industry. Suffice it to say—at long last "home merchandising" is leaving the railroad siding and finding its rightful place alongside other great industries on "Main Street."

In summary, what then have we said about the "Changing

Patterns'' of production, design and distribution? I think we have said this. Once freed from stylistic restrictions, the problems of house design, house manufacturing, house engineering and house sales are due for substantial changes in the years to come. This problem has not been resolved, but I believe we would be safe in offering the opinion that it's in the process of being resolved with the simple statement that those in the industry who have been most successful to date have been pursuing sales and distribution methods in this new home building industry more closely resembling industrial sales methods.

The chairman of the board of one of our greatest corporations producing, among other products, electrical appliances made this statement at the Investment Bankers Association Conference recently:

> ''We in America believe in large volume and small margins—not small volume and large margins.
>
> ''We in America believe in high wages, high productivity and high purchasing power. They must occur together. One without the other defeats its own ends, but together they spell dynamic growth.
>
> ''We in America believe in scrapping the obsolete regardless of its remaining useful life.''

Isn't this just another way of saying we in America believe in this new home building industry which necessitates a new and fresh approach, because it certainly has prospered and contributed so much due to this philosophy?

And then another president of another corporation also producing appliances said in a press conference introducing his new line:

> ''This is our first major contribution in the home building field. It represents a significant decision on our part to take the lead in designing and manufacturing these components especially for the new American home.''

Once again a great industrialist set out to study the needs of the market, to design for it, to authorize production and to finance an expansion program representing millions and millions of dollars for a great new industry.

And finally the sales vice president of one of the great producers of basic raw materials said:

> "The sellers—the commercial research men, the marketing men, the advertising men—are once again about to become the prime movers in our economic picture."

It's apparent to me that our challenge is great. We must view the future with high optimism—the opportunity without limit—the challenge without precedent—the need never so great. We must plan the rebuilding of our cities, not merely on paper or in fancy, but in fact. It's up to us.

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SOME CHANGING PATTERNS OF PRODUCT DESIGN AND DISTRIBUTION IN THE MAJOR APPLIANCE INDUSTRY

HARVEY E. WEIMER*

Whirlpool-Seeger Corporation

IT is most beneficial occasionally to step back and take a long, hard look at some of the significant changes that have occurred, and evaluate their impact in terms of future marketing opportunities.

The creative engineering of the appliance industry has virtually eliminated the long tedious hours over a scrub board—the scorching from the old cook stove. The waste and mess that resulted from the ice-box are little more than unpleasant memories for most women. Today, over two million families do not even have the unpleasant chore of washing dishes.

These dramatic changes have occurred, for the most part, in the last 20 to 25 years to make the appliance industry the second largest manufacturer of consumer durable goods today. In the last eight years, sales of all major appliances (excluding radio and television) have increased 50 per cent to a record breaking level of almost six billion dollars. In another nine years, sales should approximate 10-1/2 billion dollars, representing a 7 per cent gain over 1956 sales.

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REASONS FOR GROWTH

Two factors have been paramount among the reasons contributing to the rapid growth of the major appliance industry. The first, and perhaps the foremost, has been the basic desire of housewives to save time and work. This factor accounts not only for the growth of such popular appliances today as the automatic washer, dryer, dishwasher, and disposer, but also for the terrific growth of some traffic appliances and frozen foods. Sales of electric skillets, for instance, have jumped from 1,100,000 units in 1954 to 6,300,000 units last year. Production of all frozen foods has increased 4-1/2 times since 1946 and 2-1/2 times since 1950.

The second important reason contributing to the growth of the appliance business has been the rapid increase in families in the higher income categories. In the last ten years the number of families earning over five thousand dollars has increased from 3,706,000 to 19,132,000—a gain of 416 per cent—or over 15 million families. Today, almost eight out of ten families not only have the willingness to buy appliances, but also the ability. A decade ago, only three out of ten families earned over five thousand dollars.

Often we are inclined to lose sight of, or discount, these two powerful factors—particularly during periods like we are in now, when sales temporarily dip, or pause before resuming their upward climb. Let me try to illustrate this in reference to refrigerators.

CHANGES IN THE REFRIGERATOR INDUSTRY

Today, almost every home considers a refrigerator a necessity. That is why saturation has been inching upward to the theoretical 100 per cent mark. At this point, you may ask, "How can you sell a refrigerator when everyone has one?" Actually, we must admit that saturation is largely a myth. In 1950, for example, nine out of ten homes owned a refrigerator. Yet, in that year, the industry sold 6,200,000 refrigerators, and could doubtlessly have sold more had materials and manufacturing capacity been available. Consumers, that year, gave a higher priority rating to refrigerators than any other appliance, primarily as a result of the Korean War scare. The ability to buy, and the need for a newer, more convenient refrigerator existed—but the catalyst was the threat of war!

The refrigerator of today presents a real challenge to those of us in appliance marketing. All too frequently, I'm afraid, we

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are waiting for something that will dramatically obsolete every refrigerator in use. While I'm sure there are plans on the industry's drawing boards that may well do this, such as the electronic refrigerator, it is unlikely that they will become practical realities in the next several years. This means that we must concentrate our efforts on expanding the market for the product available now. Actually, since that peak year in 1950, more has been done to improve the refrigerator than in any other period since the sealed compressor became a functional and efficient unit in the late thirties.

Let's review quickly some of the more important developments which are generally available today that were practically nonexistent in refrigerators manufactured prior to 1950.

Today most refrigerators are available with automatic defrosting: A potent convenience feature to every housewife. Large, horizontal food-freezer storage compartments are now available in almost every refrigerator: A highly important feature to most housewives who prefer to shop once a week—and who have made the frozen food industry one of the fastest growing industries today.

The capacity of refrigerators has been substantially increased during the last five years, without a commensurate increase in exterior dimensions. Industry distribution of sales by sizes dramatizes the importance of this development. In 1950, the average refrigerator had a capacity of only about 8-1/2 cubic feet, with units of this size and smaller accounting for almost 60 per cent of all sales. In 1956, these sizes were responsibe for less than one-fifth of all sales. The importance of nine to ten cubic foot boxes has also declined substantially, while the eleven foot units reflected some improvement. The dramatic growth however, has taken place in refrigerators twelve cubic feet and larger. Last year these sizes accounted for almost 40 per cent of total sales-compared to less than one per cent a few short years ago.

A great many other convenience and time saving features could be added to this list, such as door shelves, egg storage racks, cheese keepers, butter keepers, air purifying systems, cold water dispensers and pull-out shelves that have been incorporated in refrigerators since 1950, to say nothing of the dramatic improvements in styling and availability of color.

All of these advances together give us a new product to sell today that provides convenience and use features far and beyond what was generally available in 1950. For all practical purposes, the 1957 refrigerator virtually obsoletes the 33 million boxes in use in 1950. And perhaps the most surprising thing is that today's

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refrigerator, incorporating all of these additional benefits, actually represents a better buy today than ever before.

In 1939, for instance, the average retail value of a refrigerator was $170. At that time, average weekly earnings equalled $25 per week. Almost seven weeks' salary was required, therefore, to buy a refrigerator seventeen years ago. In 1956, the retail value had increased to $325, but earnings were up to almost $80 a week. So, only four weeks salary are required to buy an infinitely better refrigerator.

I cite this illustration to dramatize the golden opportunity we have today in marketing one of the most important major appliances. The basic consumer need for time and work saving appliances is almost unparalleled. The ability to buy now includes the majority of all families.

In addition to research and development of an even better refrigerator for tomorrow, our primary problem today falls largely in the realm of marketing and distribution. What magic key can be turned to convert millions of prospects to owners? That's the question we must find an answer to.

I do not presume to have the answer to this question, but I believe there are some areas that will provide very fruitful digging. For example, lets take the field of advertising.

Today, consumers are bombarded with many appeals to buy. Take a cruise to Hawaii; fly the family to Miami; buy a new car, buy a second car; try this new detergent. The list is long and impressive, but against this bid for the consumer dollar, the entire refrigerator industry last year spent only $6,100,000 in national magazine, television, radio, and newspaper advertising to sell $630,000,000 worth of refrigerators (at factory billing prices). The national advertising appropriation therefore, equalled less than one per cent of the total sales volume.

Cooperative advertising expenditures for local newspaper advertising, promotions, spiffs, and contests totalled an additional $25 million—or four times the amount spent on national advertising. Little or no research has been undertaken, to my knowledge, to determine the effectiveness of cooperative advertising. This represents one specific area that deserves our time and attention.

In addition to evaluating cooperative advertising, the total amount of national and cooperative advertising expenditures would seem to be inadequate in relation to sales volume. While each industry has a different rule of thumb, it would appear that the five per cent spent by the refrigerator industry last year is substantially below the par of a great many other industries. In the food and drug field, for instance, it is not uncommon for a company to

appropriate from 20 per cent to 30 per cent of sales for advertising purposes. How much money should be spent to advertise refrigerators? Here is another area that requires some intensive research.

Another area in the field of refrigerator advertising that presents a challenge to the marketing executive relates to the basic theme of the advertisement. All too frequently, the only thing advertised is the price of the unit. We criticize distributors and dealers for failing to "sell" the features of the refrigerator, but isn't this practice a reflection of our advertising policies? We need to convince the housewife, first, that here is a product that will completely satisfy her needs before she is willing to pay anything for it.

I realize that one single manufacturer can't buck an entire industry pattern, but concerted action in the direction of selling the product first, will possibly convert many prospects to buyers. These questions concerning advertising represent but a few of the basic problems we must face—and effectively solve—before the industry can attain the level of stability and earnings that are commensurate with the investment required.

Lets look quickly at the marketing opportunities inherent in one other product where high saturation has long been a phobia.

CHANGES IN THE RANGE INDUSTRY

Almost every household has a cooking device of one sort or another. At present, there are about 25-1/2 million gas ranges and 14-1/2 million electric ranges in use. Electric ranges have, however, during the last several years increased in popularity and, at present, account for 42 per cent of total sales, compared with 37 per cent in 1948.

This trend represents a paradox and an area of opportunity to marketers who are primarily interested in the gas business. For years, gas ranges have dominated the market. Women have used them consistently, but now many are switching to electricity. Almost three-fourths of all building starts in 1956 were equipped to heat with gas. Yet many of these home owners are willing to pay a premium for 220-volt service and an electric range.

Again, this demonstrates that consumers will buy the appliance they feel offers the greatest conveniences. More consumer's believe that greater automaticity is inherent in an electric range, as opposed to gas. While this may have been true at one time, an unbiased evaluation of present day gas ranges indicates that the two types are pretty evenly matched on this score.

A more extensive investigation indicates that many women were influenced to buy an electric range because they believed that they were cleaner, cooler, and safer. But perhaps the key to consumer motivation, in this case, is best described in terms of many women who said that electric ranges were "more modern."

By interpretation, most of these women have envied the smart new all electric kitchens in model homes or homes of friends. So, while not all of them could move into a new house, a great many thought they could work wonders in updating their present kitchens by the rather inexpensive route of installing an electric range.

In addition to the opportunities inherent in marketing standard ranges, a whole new concept in ranges has evolved which may dramatically obsolete the free-standing models over the next several years. During 1956, sales of built-ins reflected the greatest growth of any major appliance on the market. In 1955, the first year industry sales were published, 300 thousand gas and electric built-ins were sold. In 1956, sales jumped to 550,300 units—a gain of 83 per cent. During the same period, sales of standard gas and electric ranges declined by 13 per cent. While built-in ranges are not new to the appliance picture, 1956 represents the first substantial volume year. A part of the reason revolves around the type of distribution that built-in ranges have followed. Because of installation costs, built-in ranges are presently sold primarily through builders and contractors. Estimates of leading manufacturers indicates that about 80 per cent of the built in volume is handled by builders, the remainder being divided between appliance stores, specialty shops, and department stores. By comparison, builders account for only about 12 per cent of the standard electric and gas range volume.

The marketing channels for built-in ranges, therefore, are substantially different from the channels used in marketing standard ranges. This difference, itself, may well account for the increasing popularity of built-ins.

As sales of new homes became more competitive, builders added additional features when they could do so without increasing the down payment requirement. Since the VA and FHA loans allows the builder 100 per cent credit in his valuation on the cost of built-in ranges, these appliances represent a "natural." They have high consumer appeal and do not increase the down payment.

Based on a survey by *American Builders,* 41 per cent of the builders installed built-ins in the new homes they built in 1955. Last year, the percentage had increased to 53 per cent. But even if a proportionate increase follows each year, the market for

built-ins will be restricted to the level of building activity. The challenge to marketing managers, therefore, is to find a way to activate sales through regular appliance or specialty dealers.

Builders are successful in selling this product because women like it and they can see it as it will appear in their kitchen. How many regular appliance dealers today are actively displaying and demonstrating the built-in range? How can more dealers be persuaded to display and demonstrate?

Because of rapidly increasing building costs, and the shortage of mortgage money, which may continue for some time, it is likely that many families will decide to postpone plans to buy a new home. Instead, the present house will be remodeled.

Today, there are approximately 30 million dwelling units that are over 18 years old. A large majority of these represent remodeling prospects, particularly the 17 million that are over 38 years old.

Recently, FHA Title I was liberalized, so that it is now possible to finance larger repair and modernization projects over a five-year period, rather than the three-year period that previously existed. In addition, the maximum was raised from $2,500, to $3,500. This act, coupled with the increasing cost of building a new home should do much to spur remodeling activity.

To capitalize on this market, however, requires an extensive group of dealers who are properly schooled in kitchen remodeling. The sale of built-in appliances hinges, first, on the dealers' ability to lay out a kitchen that captures the housewife's imagination—at a price she is willing to pay. Accurate installation costs must be determined, and a multitude of other problems resolved, before the appliances can be sold.

This represents perhaps one of the greatest challenges ever faced by appliance marketers. The degree to which we are successful in this task, will determine, by and large, the future rate of growth of the appliance industry.

To summarize, we have taken a quick look at only a few of the changes that effects the distribution of two major appliances. In both cases, we found over the years that research, engineering, and production have provided new and better products at a price that represents a saving in real income.

Millions more consumers today have the basic need for, and the ability to buy these products. The challenge of converting these prospects to owners lies largely with marketing executives. New and untested advertising approaches may be required to accomplish this objective. Certainly greater stress must be placed on selling the product rather than the price. The competition for

the consumer dollar has multiplied many times, so that the appliance must first be sold in terms of consumer wants.

Effective distributor and dealer educational programs must be launched, stressing creative selling. Many women want a new refrigerator or range, but the salesman who is agressive and informed will get the business by converting the want to a need.

How effective we are in solving these problems will determine, by and large, the rate of growth and prosperity we'll enjoy over the next several years.

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STEEL: HAS CAPACITY OUTGROWN MARKETS?

JAMES L. RICH*

United States Steel Corporation

THE question whether or not our capacities have outgrown our markets is, indeed, a provocative one. Today the steel industry operating rate is in the eighties. This surface indicator suggests that only an affirmative answer can be given. But, like the proverbial iceberg, many factors lie beneath the surface. The true situation can be unveiled only after considering several hidden forces affecting steel markets. The most important of these forces include short-term cyclical fluctuations in demand, the continuous shifting of inventory levels by steel consumers, the basic long-term growth of steel demand, the future stability of the economy, and the continuous struggle among competitive materials. Each of these five factors will be discussed in turn.

First, however, at the risk of appearing facetious, I should like to draw a parallel between the question we are asked and the capacity of the fuel tanks on the passenger aircraft which fly us around the country. Certainly each of us is thankful, if he ever thinks about it, that extra fuel is still sloshing around in the tanks when his plane sets down after a long trip and taxies up to the terminal. We are thankful because strong headwinds might have required much heavier fuel consumption, or thick fog at our destination might have forced us on to a different city. With these possibilities, excess fuel capacity is never really too much. We can hardly say that the tanks have outgrown the appetite of the engines.

The situation for the steel industry, or for the producers of any basic commodity, is very nearly the same. We, too, encounter the strong headwinds of sudden surges in demand; when

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coupled with the need for inventory replenishment these headwinds often reach gale force. Our production flight time can be seriously delayed, and in our case, several months have frequently passed before we taxi into our destination of balanced supply and demand.

Just as the airlines need flexibility in their choice of destination, we need extra capacity to supply different product needs in different locations as conditions shift in our market places. And, finally, we need extra capacity for defense, should the sad day ever return when our headwinds reach hurricane force under the impetus of wartime conditions.

While you may feel that this comparison has been overdrawn, it certainly should suggest that, regardless of current easier supply, the steel industry has a challenging future ahead and our capacity has not yet truly outgrown our markets.

Those of you who are most alert are now grumbling that I am begging the question with a general philosophical discourse instead of meeting the problem head on with clear sharp answers. Let me try the latter approach by considering each of the five major forces mentioned earlier; short-term cyclical fluctuations in demand, shifts in consumers' steel inventories, long-term growth, the future stability of our economy, and the struggle among competitive materials.

First, let's look together at the short-term demand for steel. Most of the statements on steel activity which we read in the press are related to the steel operating rate or to ingot production. We know, for example, that steel production reached an all-time peak of 117 million ingot tons in 1955, but this was only 93 per cent of capacity. Had we outgrown our markets in 1955? No one who was seeking steel in the latter half of that year would make that claim. The true facts are that in the first quarter of 1955 only 88 per cent of our capacity was utilized, but, in the fourth quarter, nearly 99 per cent was in operation and more could have been used.

In 1956, industry production fell off to 115 million ingot tons or about 90 per cent of capacity. Had we outgrown our markets in 1956? Certainly not, when we consider the gale force headwinds of a five-week strike in mid-summer.

And now in 1957, operations are in the eighties. Have we outgrown our markets? Few people realize that steel consumption in 1957 is still rising. The actual chew-up of steel this year will be nearly 85 million tons of products, almost three million tons higher than in peak 1955, and more than four million tons above 1956. This has been accomplished without the help of a peak automotive year and with lower activity in residential construction.

With simultaneous peaking in all industries, a condition which could return at any time, even though highly unlikely this year, the swing in short-term demand alone could require much of the capacity now idle.

This brings us to our second hidden force, the leverage effect of changes in consumers' steel inventories. This phenomenon largely accounts for the enigma of lower operating rates even though product consumption will be three million tons higher this year than in 1955. Time does not permit a full explanation of the inventory picture. However, our studies show that nearly eight million tons of steel products were added to consumers' stocks of steel in 1955 and 1956. Still more has been added in early 1957. This was a real need which resulted from an almost reckless unloading of inventories in 1954, a need we had to meet and a need which at times required every ton of capacity at our disposal.

Today the need for rebuilding inventories is largely past; but the passage is only temporary. History shows us all too clearly that inventory cutting, already underway in important sectors of the economy, while healthy at first, will be carried too far. And, thus, late this year or sometime in 1958, we shall face again the task of rebuilding steel inventories, probably at the same time that we experience a fresh upward surge in short-term demand.

The third hidden factor, long-term growth, can be explained best by another parallel example. Those of you with children would never think of buying a snowsuit, or a winter jacket, which exactly fit your child. Often in the first year of a new coat, the hands are nearly hidden up under the cuffs, but two years later long expanses of wrist are exposed.

Today, it may seem that our sleeves in the steel industry are a little long; our coat is cut to allow for growth. But we are just as confident of growing into the garment as you are sure that your child will soon fill out this winter jacket. In fact, it is your child and millions more like him, continually outgrowing his clothes, and wearing out your car and your refrigerator, who give us the confidence to plan for an ever-increasing demand for steel.

More seriously, our detailed studies of the national economy and the various steel-consuming industries indicate that steel demand in 1975 is likely to exceed 150 million ingot tons on what we call a normal level; and that, in order to meet peak requirements, the steel industry is faced with the necessity of adding around 50 million tons of capacity by 1975. From this point of view, can we say that our capacity has outgrown our markets? The answer is clearly an emphatic "no!"

Now, how about the future stability of our economy? If the

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business cycle is dead, do we need quite so much capacity to meet sudden surges in demand? Well, the cycle is not dead, but only softened. For a long time into the future, we shall continue to face changes in demand among industries. First one and then another will surge forward and then stop to catch its breath. Hopefully, the pattern of rolling readjustment which has featured the postwar period will continue. Even an unhappy combination of several industries catching their breath at one time, however, would be only a temporary setback. Meanwhile, we must be prepared to meet the challenge of many industries moving forward together in unison as they have so often in the past. Permanent economic stability is a great hope, maybe a distinct possibility; however, it is still an uncertain substitute for having steel available in the right places and in the right products when our customers have peak requirements.

Finally, in the never-ending struggle among competitive materials, the battle will be won in part at least by the industry which has the material when it is needed. The built-in functional qualities of these materials and their economics in the end-product are truly important in determining which one shall be used in a given application. But, we can be sure of one thing, our material will not be used if it is not available. We intend to meet the competitive challenge without this handicap. With this philosophy can we say that our capacity has outgrown our markets?

In conclusion, we have examined the situation for steel from several points of view. I hope some light has been shed on the problem for you. If it has, you can hardly escape the same conclusion I have reached. Steel capacity has not yet outgrown its markets.

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ALUMINUM: HAS CAPACITY OUTGROWN MARKETS?

SIDNEY M. BLUMENREICH*

Reynolds Metal Company

THE history of the aluminum industry seems to be marked by prophesies of long term surpluses and excessive capacity. These are formulated, in general, subsequent to surges in expansion of primary aluminum capacity. Certainly, if we examine the projected capacity of the aluminum industry and compare anticipated supply with current consumption, we may wonder at the soundness of the decisions to make the enormous investments required. In the postwar periods, this situation occurred twice, and on each occasion analysts, inherently conservative in outlook, were proven far too pessimistic in assessing the underlying strength of the growth of aluminum demand.

Let us take a few moments to review the current status of the industry and its planned expansion. I'd like to set the stage for the current expansion program by going back a few years to the beginning of the Korean War. Just prior to the war and during its early stages, the government sought to double primary aluminum capacity in the United States. The object of this program was to provide adequate production facilities and a stockpile of aluminum in the event of an emergency. Aluminum's importance as a vital metal whose requirements during wartime expanded many times was well recognized.

During 1950 U. S. production of primary aluminum was 1.4 billion pounds. While all of the industry's production at that time

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was needed to meet the expanding requirements of the military and civilian demands, a doubling of capacity was believed to be well in excess of expected needs. More importantly, in order to provide producers with a basis for seeking the massive loans required to double capacity, the government contracted to purchase any portion of the production of the expanded plants which industry couldn't sell for a period of five years.

The Korean expansion plan was implemented in three stages or "rounds," as they were called. In planning these expansions, projections of civilian demand and military requirements under a limited defense program were compared with estimated supply. These estimates showed that the growth of aluminum demand would not reach the supply figure until sometime in 1959. During that period, the government could take the surplus to attain its planned stock pile goal.

By 1954, primary aluminum output reached 2.9 billion pounds. Total supply, including imports of primary ingot (most of which comes from Canada) and secondary ingot was four billion pounds. The termination of active hostilities in Korea, the subsequent reduction in military requirements, and the inventory recession of 1954 brought a slight decline in demand in 1954 to three billion pounds compared with 3.2 billion for the preceding year. The surplus of one billion pounds appeared to substantiate conservative expectations and, for the first time, a substantial quantity of aluminum was taken into the stockpile. The excess of supply was considered so large that many people within the industry, told me personally that we would not see a shortage of aluminum for many years.

In early 1955, the government "called" for large quantities of aluminum for its stockpile. The recovery of economic activity brought with it a surge in aluminum demand which, to those who study the industry's history, was not atypical. Aluminum's long position was short-lived and stockpile calls were deferred. The industry's output of 3.1 billion pounds of primary, and total supply of 4.3 billion pounds was insufficient to meet demands of its customers and a drastically reduced stockpile program. Shipments rose 33 per cent from three billion pounds to four billion in 1955 and were running at the rate of 4.4 billion pounds in the first quarter of 1956.

It may be relevant at this time to introduce other projections of aluminum demand which met much the same fate. Shortly after World War II, a major study of potential uses of aluminum concluded that the market could absorb 1.8 billion pounds of aluminum by 1950 if the price of aluminum (then 15 cents per pound) were 10

cents per pound. In 1950, the U. S. used 2.4 billion pounds of aluminium at 17-18 cents per pound.

The President's Materials Policy Commission, known better perhaps as the Paley Commission, studying many critical and strategic materials in 1952, judged aluminum to have the fastest growth among major metals during the period 1950-1975. About a year and a half ago, I had an opportunity to speak with one of the men who had worked on the report. He had reviewed all of the Commission's projections and found that, of all the commodities studied by the Commission, only three were exceeding the rates expected. Aluminum was the only metal—the others were natural gas and electric production.

Having this in mind, let us return to the situation in 1955. The tremendous surge in demand had moved aluminum into an extremely tight position and the government extended its stockpile calls for the first half 1955 and deferred them entirely for the second half of the year. New applications were developing and the outlook for further gains in use was excellent. In the entire postwar period there were only two short periods when aluminum was not under allocation or government control. It was believed that the inability of customers to obtain adequate supplies of aluminum was retarding further use of the metal. The producers immediately undertook to expand production and two new companies entered the field. The capacities of the companies and their planned expansions are shown in Table I. During the next two to three years, primary aluminum capacity in the United States will be increased from 3,595 million pounds on January 1, 1957 to 5,159 million pounds. This expansion of 1,564 million pounds, most of which will be completed by 1959 all by 1960, exceeds the entire U. S. production in 1950. In 1960, it is estimated, primary production in this country will be more than 3.6 times our production in 1950.

To implement this expansion and supplementary operations, Reynolds, Alcoa, and Kaiser spent about $330 million for capital expenditures in 1956 and plan increased outlays, $525 million, in 1957. In addition, the Olin-Matheson and Revere plant, with capacity of 360 million pounds, will cost $231 million when completed, and Harvey is investing $65 million in their plant at The Dalles, Oregon.

When this program is completed, total supply will reach 6.9 billion pounds. This compares with a total of 4.7 billion pounds in 1956 (see Table II.) To use all of this supply, demand for aluminum would have to rise 65 per cent from last year's 4.1 billion pounds. It would seem that the aluminum industry has gone all out to instill confidence on the part of its customers to design freely in alum-

Table I

Primary Aluminum Capacity and Expansion Plans*

By Company

(Million Pounds)

	January 1, 1957	Expansion	1960
Reynolds	977	425	1,402
Alcoa	1,585	340	1,925
Kaiser	913	305	1,218
Anaconda	120	-	120
Ormet	-	360	360
Harvey	-	134	134
Total	3,595	1,564	5,159

*Includes only those plans for which financing has been arranged.

Table II

Aluminum Supply and Shipments

Selected Years 1950 - 1960

(Billion Pounds)

Supply	1950	1954	1955	1956	1960
Primary Production	1.4	2.9	3.1	3.4	5.1
Primary Imports	.4	.4	.4	.5	.6
Domestic Secondary Recovery	.5	.6	.8	.9	1.2
Imported Secondary Recovery	.1	X	X	X	X
Total*	2.4	4.0	4.3	4.7	6.9
Shipments to Consumers	2.4	3.0	4.0	4.1	

*Total may not add, due to rounding.

inum with the assurance of adequate supplies over the next several years.

Has our capacity outgrown its markets? To provide some insight into this problem we should look first to our projections of general economic activity. In Table III, we have compared year to year changes of shipments of aluminum with those in important aluminum consuming industries for some recent periods. We have noticed that aluminum requirements advance abruptly when the appliance, construction and motor vehicle industries show significant gains. In the course of a single year, between 1949 and 1950, shipments rose 45 per cent. Similarly from 1954 to 1955, shipments rose 33 per cent and more could have been shipped if the metal were available.

You will note that although defense requirements were halved between 1953 and 1954, and both appliance and motor vehicle output also dropped, total shipments were down only seven per cent. Today, less than ten per cent of total aluminum shipments, exclusive of stockpile, go direct for military programs. Unless a drastic change for defense expenditures is made in the near future, I anticipate no significant departure from current levels over the next two to three years.

Our demographers tell us that U. S. population will grow from 168 million in 1956, to close to 180 million by 1960. With increasing productivity, Gross National Product should reach $470 billion (of 1956 dollars,) a gain of 14 per cent over the 1956 level. Industrial activity, which rises somewhat more rapidly than G.N.P., may be expected to reach 170 by 1960, a rise of 19 per cent over the 1956 level. In Table III, I have entered estimates for gains in appliances, construction, and motor vehicles for 1960 over the 1956 levels. Of course, these are subject to some variation depending on who is making the projections. None of us find the crystal ball very clear. Although some variation from the projections in Table III is probable, we may conclude that significant increase may be expected in the appliance, construction and motor vehicle industry between 1956 and 1960. The likelihood is, too, that all three will move up in concert. When this occurs, demand for aluminum will take its next sharp increase.

We have seen projections for 1960 varying from six billion pounds to over seven billion pounds. The latter figure can be obtained from the long term statistical growth curve for aluminum which has been rising at the rate of over 10 per cent per year.

Aluminum's uses are continuing to multiply in many fields. A list of some would include automobiles, ships, boats, railroad freight cars, trailers, and containers for fishy and piggy back in the transportation field; windows, doors siding, roofing, hardware,

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Table III

Changes in Economic Activity

Selected Industries

(Per Cent Changes Year to Year)

	1949-50	1953-4	1954-5	1955-6	1956-60[P]
Appliances	+ 54	- 8	+18	0	+ 30
Construction	+ 20	+ 6	+10	- 2	+15
Motor Vehicles	23	-14	+ 40	-18	+30
Defense	N.A.	-52	- 6	+ 6	0
Industrial Activity	+ 16	- 7	+10	+ 3	+19
Aluminum Shipments	+ 45	- 7	+33	+ 3	

P - 1960 Projected

N.A. - Not Available

Sources:

Appliances - Major Household Goods (FRB); Construction - New Construction Activity, 1947-9 Prices (Department of Commerce); Motor Vehicles - Autos, Trucks and Parts (FRB); Defense - Actual Shipments of Aluminum (BDSA); Industrial Activity (FRB); Aluminum Shipments (BDSA).

curtain walls, building panels, and awnings in the building field; bridge rails, light poles, and guard rails in the highway field; appliances, such as hot water heaters, refrigerators, freezers, air conditioners, portable TV cabinets, and other major and small appliances; the entire electrical field, presenting a vast potential for aluminum for distribution as well as transmission uses; strip conductor for transformers, motors, and bus in the electric equipment field; pipe for the petroleum industry; containers, flexible wraps and household foil in the packaging field; and many others. Perhaps the automotive producers' contracts with our own company can best substantiate the confidence placed in the future growth of the metal's applications.

The producers themselves are devoting much of their resources in new market development. This year roughly $25 million will be

spent by the three major producers in advertising the advantages of aluminum, in describing its versatility, and in promoting the aluminum manufactures of its customers.

Today, with inventories being curtailed, and housing, automotive and appliance industries down, it may appear to some that the aluminum industry's capacities have outgrown markets. I feel the industry has shown they are prepared to meet the growing needs of old customers and are ready to meet substantial requirements of new aluminum users.

In the postwar period, the aluminum industry has operated at 100 per cent capacity, except for shutdowns due to factors beyond their control, such as power curtailment. On the other hand, except for the Korean War period, the steel industry operated at roughtly 85 per cent capacity since World War II. The recent action of Anaconda in shutting down part of its production at Columbia Falls may be indicative of some change in future practices, in the sense that the industry may have to operate at something below full capacity in periods of low economic activity. Generally, it appears the producers face the future with the confidence that all of their capacity can be sold. Only the coming years will decide whether or not any severe imbalance will exist.

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TITANIUM: HAS CAPACITY OUTGROWN MARKETS?

BERNARD J. KEFFLER*

Republic Steel Corporation

TITANIUM is a recent but robust addition to the family of structural materials. In less than ten years it has achieved a stature that took older metals a half century to reach. Aided post-war by government technical and financial assistance, the metal's progress is now being increasingly sponsored by private industry. Its unusual combination of properties is already recognized in military applications, and is beginning to receive broader civilian recognition. With further declines in costs and selling prices, titanium could attain a broader usefulness throughout industry.

Production of sponge titanium has grown from an initial commercial output of three tons in 1948 to over 14 thousand tons in 1956. Except for one year, output has doubled in every year since 1951. 1957 shipments should exceed those of 1956 by 60 per cent. Nearly six thousand tons were produced in the first three months of this year. Shipments of mill products in 1956 reached 5,065 tons, worth $125 million. Industry capacity would permit mill shipments of 12 to 14 thousand product tons in 1957. Shipments of metal in the first quarter of this year were nearly three thousand tons.

Significant progress toward the development of a process for casting titanium has reportedly been achieved, even though full scale commercial operations are not yet practicable.

Titanium's initial and phenomenal rate of progress cannot be expected to continue indefinitely. This is obvious from mathematical as well as practical considerations. In its current stage of production history, titanium must meet the challenges of further

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cost reductions, of developing new metallurgical techniques, of raising and justifying huge sums for expansion, and of winning broad acceptance in civilian markets. While nearly all of the production of titanium to date has been going into defense connected consumption, principally aircraft, efforts have gradually been expanded to promote its applications in the civilian market, such as the food, chemical, petroleum, pulp and marine hardware industries.

Titanium's future utilization will depend more on the competitive status of its alloys rather than on the pure metal itself. Its position in this respect is being steadily enhanced through added know-how and new technological developments. Titanium alloys are roughly half the weight of steel and twice that of aluminum. They are significantly stronger on a strength-weight basis.

For structural applications titanium now shows the maximum weight saving advantage in the middle temperature range (300 F. to 1,000 F.) or between aluminum and stainless steel. Here it has acknowledged superiority in terms of strength-weight ratios and corrosion resistance, and on a long range basis it should match the other two metals and their alloys in general usefulness. Newer alloys could make titanium structurally superior to aluminum on a weight basis even at room temperature.

Titanium ranks high among the metals in respect to its other outstanding characteristic—resistance to corrosion. It has been found, and is now generally accepted, that the marine corrosion resistance of titanium is unsurpassed and is equalled only by the precious metals and Hastelloy C.

Titanium's major usefulness then will be based on its two most outstanding qualities: (a) Its strength-weight ratio, particularly at temperatures up to about 1,000 F.; and (b) Its corrosion resistance to salt water and a variety of important chemicals, as compared to other known and widely used metals.

Price reductions, both in sponge and in mill products, are notable not only for their extent but also for the relatively brief period of time in which they occurred—about as short a period as has occurred in the history of any new metal. They have been achieved by the determined efforts of both government and industry to move ahead as quickly as possible in developing titanium to the point where it can be used widely in both military and civilian applications.

From 1948, when titanium was first produced commercially, until April 1, 1954, the price of titanium sponge metal was five dollars per pound. The succeeding three years have seen an

uninterrupted downward trend. The present price for A-1 sponge is $2.25 per pound. This price history reflects the solution of numerous technical production problems and the transition from pilot plant to expanded production operations.

Lower sponge prices and improved production techniques have enabled titanium metal producing companies to likewise make substantial savings, which have been passed on to consumers in the form of lower mill price quotations.

At present, the average price of titanium metal is about $11 per pound (sheet, strip and wire higher with most bar and billets lower) or approximately 15 or 16 times that of ordinary grades of stainless steel. By volume or area, however, since titanium is about half the density of steel, this price ratio is about seven or eight to one. Even at this high price, the metal has been economically justified in many non-military applications—longer service life and less down-time have more than offset the higher initial cost.

If this price level is further substantially reduced, and we hope this can be done, titanium could become truly competitive with stainless steel and might well supplant that metal for many applications, particularly in the intermediate temperature range. It will take time, however, to accomplish this. As a general premise, titanium is not expected to displace iron or structural steel as a universal material for low cost construction, nor will it be competitive in all applications with stainless steel, aluminum, or magnesium. However, it will undoubtedly find many engineering uses where its unusual combination of physical properties is utilized and where resistance to corrosion is an important prerequisite.

Four major melters and processors of titanium metal dominate the market. They are: Titanium Metal Corporation of America, Mallory Sharon Titanium Company, Rem-Cru Titanium Corporation and Republic Steel Corporation. Harvey Aluminum Company and Oregon Metallurgical also have facilities to melt titanium ingots.

According to recent government reports, the metal industry by the end of this year will have capacity to melt at an annual rate of at least 35 thousand ingot tons. Translation of this capacity into metal shipments would indicate an annual mill product capacity of from 18 thousand to 20 thousand tons.

To the best of my knowledge, the figures just related are the extent of current expansion plans. I have no doubt, however, that as the market for titanium indicates greater capacity to be necessary, the industry will have made adequate advance planning.

Now we must ask: Is this sufficient? Today the only answer to this question would be "Yes." Until about February or early March of this year, most titanium products were in tight supply—deliveries were extended, and at that time it appeared that industry would not be able to meet demands within this year, which earlier were estimated at 12 thousand product tons. Since then, however, because of governmental stretchout of procurement expenditures, revisions in buying procedures (lead times) and adjustments in contractors' inventories, demand has decreased sharply. The market in 1957 through 1959 will probably be considerably lower than the original estimates. After that, the demand should soar again because a new crop of advanced aircraft reportedly should go into production at that time. I would estimate total 1957 mill shipments at approximately eight thousand product tons. In attempting to answer the question which we are considering here—"Has capacity outgrown markets?" I must honestly say that temporarily, so far as titanium is concerned, it has—and I believe this situation will exist for at least a year or more. It will be affected by one or more of the following conditions:

There should be an increase in civilian and military demand with each substantial reduction in price for mill products—the trend in prices has consistently been downward. This is in contrast to virtually all other products. This month mill prices were again reduced—this time about 10 per cent.

Fabrication prices will become more nearly competitive with those for other materials—this will further reduce the price of finished parts and stimulate greater demand.

Many experimental programs now in progress will be completed and undoubtedly prove that titanium is the economically advantageous metal to use on many new applications—especially those involving corrosion.

When the metal producers are able to guarantee production quantities of large size, light gauge, high strength, heat treatable and weldable sheets, new and important areas of application should open up for military airframe builders.

Lastly, but not least, for there are many more uncertainties, new and presently unforeseen heavy military demand could be brought about by changes in international events.

Definite steps are being taken to materially improve titanium mill products. Republic, for instance, is now installing an experimental production skull melting furnace which, if successful, should permit pouring up to two thousand pound ingots with all the

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metal being molten at one time and which should afford further improvement in uniformity of composition throughout the ingot. This method of melting, with its better control of bath chemistry as in electric furnace and open hearth melting, should permit the use of greater quantities of both home and field scrap and thereby bring about lower raw material costs.

Also included in this eight million dollar expansion step are larger consumable electrode furnaces of conventional design to produce 30-inch diameter ingots, each weighing about 8,500 pounds. These larger ingots, in comparison with the four thousand pound ingots of today, will permit greater reduction or working of the metal from ingots to finished mill sizes or fabricated parts. Furthermore, they should permit larger forgings for aircraft and other applications.

There is no doubt that real strides have been made over the past five to seven years in improving the over-all status of titanium and that today it is a dependable material of construction. With many difficulties and shortcomings behind us, we can look forward to a future of real promise. Recent steps taken and those anticipated should result in continued improvements in quality, availability and economics.

Some market analysts have forecast that titanium's long term potential will result in a market stature comparable to that of stainless steel and aluminum. This, of course, is a very ambitious prediction since stainless shipments last year were nearly 700 thousand tons and aluminum nearly 1,500 thousand tons. We are optimistic about the future of titanium, even though at present capacity exceeds demand, and I believe that in 1960 consumption will be 15 to 20 thousand product tons. Titanium is gaining recognition steadily as an important construction material, and I am convinced that it will earn a place for itself in many civilian areas. But, of course, considerable work must be done by industry to bring this about.

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UNITED STATES ENERGY REQUIREMENTS IN 1965

NATHANIEL B. GUYOL*

Standard Oil Company of California

IN the operation of the U. S. economy we are now consuming annually about 440 million tons of coal, 3,200 million barrels of oil, 10 trillion cubic feet of natural gas, and 600 billion kwh of electricity.[1]

If these commodities were independent of each other, their growth curves would probably be reasonably smooth, and we could forecast requirements in 1965 simply by projecting, separately, past trends in the consumption of each. They are not independent, however, nor is any of them—of itself—essential to the operation of the economy. As you can see from Figure 1, all the different sources of energy—coal, crude petroleum, natural gas and hydroelectricity—are reduced ultimately to either heat or power.

Particular sources of heat and power are selected on the basis of technical suitability, economy, and convenience. For most activities, the selection is based primarily on the two latter considerations: three-quarters of the heat and power actually consumed in 1955 could have been obtained from *any* of the four sources shown. Two important exceptions are the coke requirements of the metallurgical industries and the liquid fuel requirements of internal combustion engines.

This interchangeability of energy sources—the ability to substitute one fuel for another—is illustrated further by the changes that have taken place in our fuel mix during the past half century. In the early 1900's, we got most of our energy from raw coal and fuel wood. Now, only a little more than half a century later, wood

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**Nathaniel B. Guyol* has been an economist and statistician in the field of energy for the past fifteen years. He became a member of the Economics Department of the Standard Oil Company of California in the fall of 1956, after nine years with the United Nations. Previously, he had worked in the U. S. Department of State, and before that, with the Tennessee Valley Authority. Mr. Guyol holds an MA degree from the University of Chicago.

1. Excluding electricity generated in industry for own use.

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has nearly disappeared as a fuel, except in the homes of the very poor and the very prosperous, while coal has so declined in importance that it provides now only 28 per cent of our supply of useful energy. Sixty-nine per cent of this supply is obtained from oil and gas.

I am stressing this point about interchangeability of energy sources because it has had, and may continue to have, a profound effect on demands for coal, oil, or any other particular source of energy.

The dieselization of railways provides one very good example of what I mean. Between 1947 and 1955—the main period of dieselization—60 million barrels of diesel oil took the place of roughly 80 million barrels of fuel oil and 90 million tons of coal. Had dieselization not taken place, the demand for coal would have declined during this period at a rate of one and one-half per cent rather than three and one-half per cent per year. The demand for distillate fuel oil would have increased at a rate of seven per cent instead of eight and one-half per cent per year, and the demand for residual fuel oil, which actually increased at a rate of less than one per cent per year, would have risen at a rate of two and one-half per cent per year.

This sort of development obviously must be taken into account in estimating future requirements of particular energy sources, not only as a positive force—affecting demands for different fuels as long as it continues—but also as a force which must terminate when all competitive fuels have been displaced.

The example of railway dieselization also brings to light another effect of fuel substitution: namely, the change in efficiency that may result when one source of energy is substituted for another. The impact of railway dieselization on the coal and fuel oil markets was all out of proportion to the gains recorded by diesel oil; the energy content of the fuels displaced, after correcting for changes in the volume of rail traffic, was eight times as great as the energy content of the diesel oil that did the displacing. The consequences of substitution are not always so magnified, but most switches from one source of energy to another are accompanied by some gains in efficiency of fuel use. This fact must also be taken into account in estimating our future requirements of energy.

There is no reason for assuming the railways offer unique opportunities for substitution; other sectors of the economy may be equally vulnerable. Before attempting to forecast total energy requirements, or requirements for particular sources of energy, it is therefore essential that we examine each sector of the economy separately, to find out where else the process of substitution has

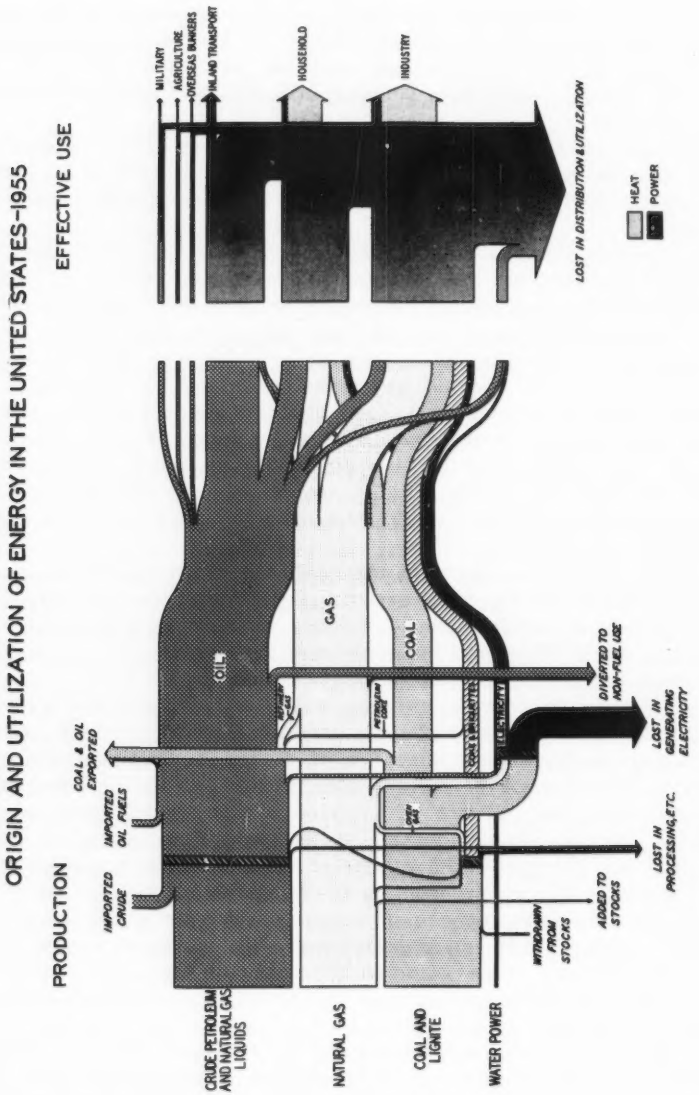
ORIGIN AND UTILIZATION OF ENERGY IN THE UNITED STATES-1955
PRODUCTION
EFFECTIVE USE
CRUDE PETROLEUM AND NATURAL GAS LIQUIDS
NATURAL GAS
COAL AND LIGNITE
WATER POWER
IMPORTED CRUDE
IMPORTED OIL FUELS
COAL & OIL EXPORTED
WITHDRAWN FROM STOCKS
ADDED TO STOCKS
LOST IN PROCESSING, ETC.
LOST IN GENERATING ELECTRICITY
DIVERTED TO NON-FUEL USE
OIL
GAS
COAL
MILITARY
AGRICULTURE
OVERSEAS BUNKERS
INLAND TRANSPORT
HOUSEHOLD
INDUSTRY
LOST IN DISTRIBUTION & UTILIZATION
HEAT
POWER

Figure 1

been going on, and to what extent efficiencies of energy use have been thereby affected.

INDUSTRIAL ENERGY

Let us look first at the industrial sector of the economy, the largest of our energy markets. Thirty-one per cent of our supply of fuel and power, or the equivalent of about six million barrels of oil per day, is delivered to this sector.

Part of the industrial market is noncompetitive. Certain sources of energy perform functions that are unique, which assure them of a continuing share of the market. Metallurgical coke is an example. Certain other fuels, such as coke breeze, oven gas and refinery gas, are simply by-products to be disposed of at whatever the market will bring. And still other fuels, such as the natural gas used in field operations, occupy such a favored position in their own markets as to be practically noncompetitive. Demands for all these noncompetitive sources of energy, which together represent about 40 per cent of industry's total demand, can be expected to develop at approximately the same rate in the future as they have in the past.

The other 60 per cent of the industrial market is highly competitive. Here, coal has largely given way to other sources of energy, especially natural gas and electric power. Oil's share in this market has increased, but modestly in comparison with the gains registered by gas and electricity. Rates of change in *effective* supplies of energy are shown in Figure 2. This chart, and all but the last of the charts that follow, has been plotted on semi-log paper in order to show relative rates of change properly. The important fact brought out here is that the great gains made by electricity, natural gas and oil have been achieved partly by virtue of the normal growth of the industrial market—but to a considerable extent by the displacement of coal. The total market, represented by the top line of the chart, developed at an average rate of four per cent per year between 1937 and 1955, as compared with eight and one-half per cent for electricity, nearly eight per cent for natural gas, and five and one-half per cent for oil fuels. The coal market declined at an average rate of about one and one-half per cent per year over the period as a whole, and at a rate of about six per cent per year in the final five years.

This displacement of coal by more efficient fuels resulted in an increase in the efficiency of energy use—from 64 per cent in 1937 to 72 per cent in 1955. The four per cent total-market-increase rate that you see here would be only a three and one-half

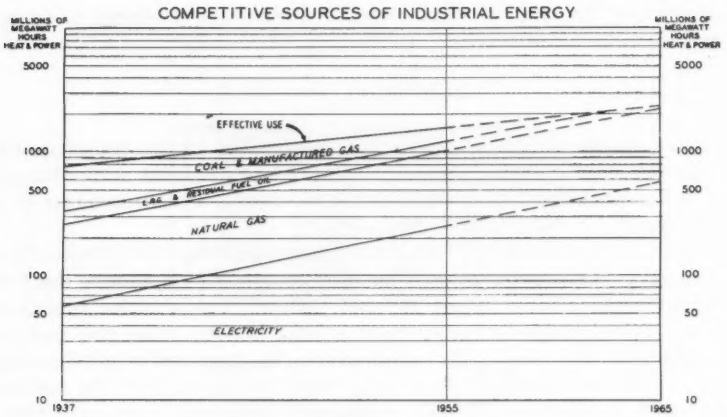

Figure 2

per cent rate if it were plotted in terms of actual input of fuel and power.

The broken lines indicate what might be expected if past trends were to continue through 1965, should this occur, all coal would be displaced by about 1963, and some other source of energy would begin to feel the squeeze.

Prices, of course, will play a major part in determining whether or not these trends continue. The importance of their role in the past can be seen from the following rather crude comparison of price increases with increases in the use of particular fuels, as shown in Table I.

Table I

PRICE AND DEMAND CHANGES, 1937-1955
COMPETITIVE SOURCES OF INDUSTRIAL ENERGY

	Percentage Increase in Wholesale Prices	Percentage Increase in Demand
Electricity	-21%	+351%
Gas	+14%	+281%
Petroleum Products	+90%	+163% /a
Bituminous Coal	+94%	- 23%
Anthracite Coal	+101%	- 34%

/a Fuel oil and LPG only

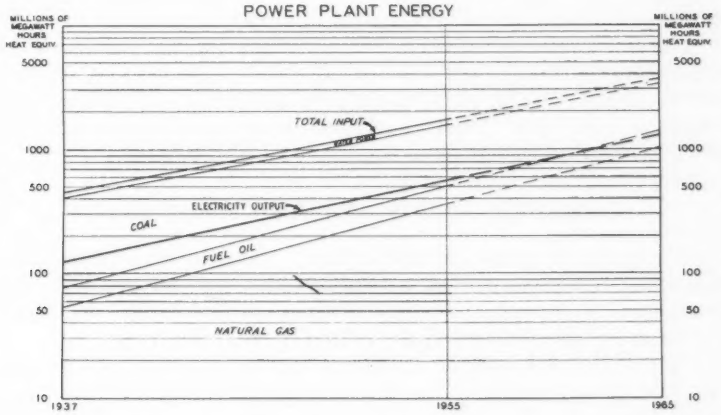

Figure 3

POWER PLANT FUELS

Electric power systems take 15 per cent of our fuel and power supply, returning five per cent in the form of electricity for use in other sectors of the economy. Energy requirements here, shown in Figure 3, have outpaced those of all other sectors of the economy, with fuel consumption rising at an average rate of about eight per cent per year, total output at a rate of nearly nine per cent and output of thermal electric power plants alone at more than ten per cent per year.

Here, as in the industrial sector, rates of gain were related to changes in relative costs: the greatest gains were registered by natural gas, with a sixfold increase between 1937 and 1955. Consumption of fuel oils increased more than fourfold, while consumption of coal more than trebled.

Unlike the industrial market, the gains made in this market between 1937 and 1955 were due almost entirely to the over-all growth of electric power requirements. Displacement appears to have played a minor role, if any. The growth rates of the period 1937-1955 have, therefore, been projected without interruption to 1965. One possibility has been disregarded here—the possibility that there will be some decleration in efficiency gains during the next ten years. Should this occur, the input requirements of

electric power plants would be somewhat above the levels indicated in the graph.

Nuclear fuels will almost certainly provide part of our electricity supply in 1965, but there is as yet no evidence that nuclear-fueled plants will be economically competitive with conventional plants at that time. Their contribution to electricity supplies in 1965 is therefore likely to be negligible.

DOMESTIC AND COMMERCIAL ENERGY

The domestic sector of the economy, which includes households, business and commercial establishments and public buildings, consumes 25 per cent of our total supply of fuel and power, or the equivalent of four and one-half million barrels of oil per day.

Apparent consumption of energy in this sector has been increasing rather slowly. During the period 1937-1955, it averaged somewhat less than two per cent per year. This figure is misleading, however, because fuel efficiency in the domestic sector increased by about one-third between 1937 and 1955. *Effective* consumption of energy rose at a rate of somewhere around three and one-half per cent per year.

Changes in the origin of domestic energy supplies, 1937-1955, are illustrated in Figure 4. It is clear from the chart that the gains registered in the past by gas, oil and electricity were

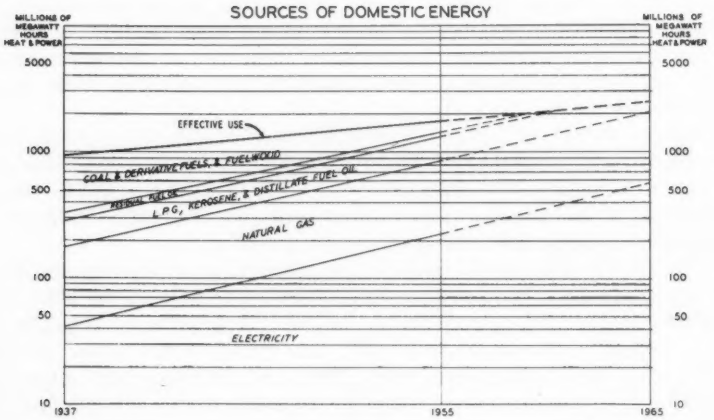

Figure 4

achieved, to a very considerable extent, at the expense of coal and fuel wood. It is also clear that this process must soon come to an end; if past rates of development were to continue, as projected on the chart, these fuels would be displaced entirely within about five years, and by 1965 a considerable amount of oil also would be displaced.

Relative prices will certainly play a role in determining which sources of energy are used in the future, and in what quantities. Table II indicates that they will play a major role.

Table II

PRICE AND DEMAND CHANGES, 1937-1955
COMPETITIVE SOURCES OF DOMESTIC ENERGY

	Percentage Increase in Retail Prices	Percentage Increase in Demand
Electricity	-5%	+441%
Gas	+13%	+367%
Distillate Fuel Oil	+93% /a	+325%
Bituminous Coal	+113%	-41%
Anthracite Coal	+121%	-65%
Coke	+159% /b	-86%

/a No. 2 Fuel Oil
/b Computed from index of wholesale prices

TRANSPORTATION ENERGY

A little more than one-fifth of our energy supply is consumed in transportation, the greater part in transportation by road and rail, lesser shares in transportation by water, pipeline and air.

Developments of energy use in transportation are shown in Figure 5. Several changes in the fuel mix deserve special comment. It will be noted, for example, that coal has been almost completely displaced from this sector of the economy; it now provides only two per cent of the energy effectively used in transportation, as against 21 per cent in 1937. Distillate fuel oil has increased inordinately in importance—from seven per cent in 1937 to 22 per cent in 1955—partly because of railway dieselization, and partly in response to the growing use of diesel vehicles on the highway. The

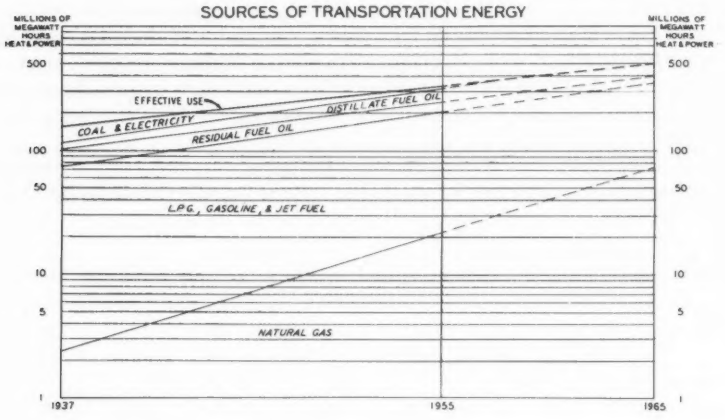

Figure 5

importance of residual fuel oil has decreased, but mainly because of railway dieselization. Its use in ships' bunkers has increased substantially. Altogether, oil products now provide 90 per cent of the useful energy consumed in transportation.

Proportionally, natural gas appears to have made greater gains than any other source of energy in this sector of the economy, but this conclusion needs two qualifications. First, the natural gas curve is based in part on my own estimates of pipeline usage, in particular for the year 1937; and second, future use of natural gas in transportation is likely to be limited, as it now is, to gas pipelines. The 1965 projection, although I believe it is about correct statistically, appears too high from a technical point of view. In any case, the quantity of energy involved is so small that it does not seriously affect estimates for other sources of transportation energy.

Transportation, more than any other one sector of our economy, has benefited from improvements in fuel efficiency. The dieselization process raised the average efficiency of railway locomotives from five per cent in 1937 to 20 per cent in 1955. During the same period, the over-all efficiency of fuel use in transportation appears to have increased from nine per cent to 13-1/2 per cent. By virtue of these gains, the work performed in this sector of the economy—that is, the energy effectively used—increased at a rate of more

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four per cent per year, while *apparent* consumption of energy rose at a rate of only one and one-half per cent per year.

There is some doubt about the way in which fuel efficiencies in the transportation sector will move during the coming decade. Some improvements in efficiency will result from further dieselization of highway vehicles and increased usage of higher compression ratios and low-horsepower foreign cars. However, these gains could well be offset by losses in efficiency resulting from the growing use of high-horsepower American cars and automatic transmissions, and by further shifts of traffic from railways to highways. The most likely prospect at the moment appears to be that the over-all efficiency of oil use in transportation will decline slightly during the next few years, then stabilize or increase. In this case, total oil use in transportation might be expected to rise for the next five years or so at a rate of perhaps five per cent a year. Thereafter, the rate of increase should decline to about four per cent a year.

OTHER ENERGY USES

In addition to the major uses of energy described above, there are two minor energy requirements that should be mentioned, and certain non-fuel uses and losses that must be taken into account in estimating future requirements of particular energy sources.

About one per cent of our total energy supply is used in agriculture, mostly in the form of gasoline, kerosene and distillate fuel oil. I would expect requirements here to develop at about the same rate as the whole economy, and oil fuels to continue as the principal source of energy.

About two per cent of our energy supply is used by the military forces, a share which I would expect to decline somewhat in the course of the next ten years. In the past, this energy has been obtained almost entirely from oil, but some of this oil is going to be replaced by nuclear fuels, especially in the propulsion of naval vessels.

Non-fuel uses of various energy products absorb about four per cent of the total energy supply. These include use as a raw material in the production of such items as lubes, asphalts, carbon black and electrodes. The diversion of energy to these uses has just about kept pace with the economy as a whole. There has been some shift in the *fuels* diverted to these purposes, however, with natural gas decreasing in importance, oil derivatives increasing. Another six per cent of our fuel and power supply is lost or otherwise not accounted for. This includes chiefly natural gas and

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electricity lost in transmission or distribution, certain processing plant losses, and gasoline lost through evaporation.

It seems reasonable to assume that both non-fuel uses and losses will continue to develop at about the same rate as they have in the past.

TOTAL FUEL AND POWER REQUIREMENTS

These are the component parts of the puzzle. Put together, they indicate that we will be consuming in 1965 the energy equivalent of about 27 million barrels of oil per day, or about half again as much as we consumed in 1955. For those of you who think more easily in coal equivalents, this would equal 2.2 billion tons of coal per year, as against one and one-half billion tons per year in 1955. This estimate is made on the assumption that our economy will continue to develop at a pace of about four per cent per year, a growth rate I have come to regard as normal.

Since none of us sells *energy* as such, the next question is: how much coal, oil, gas, and electricity will be used in 1965 to produce this energy?

Figure 6 shows how demands have grown since 1937, and establishes an approximate *range* of possible demands for each source in 1965. Two estimates, represented by *Bar A* and *Bar B*,

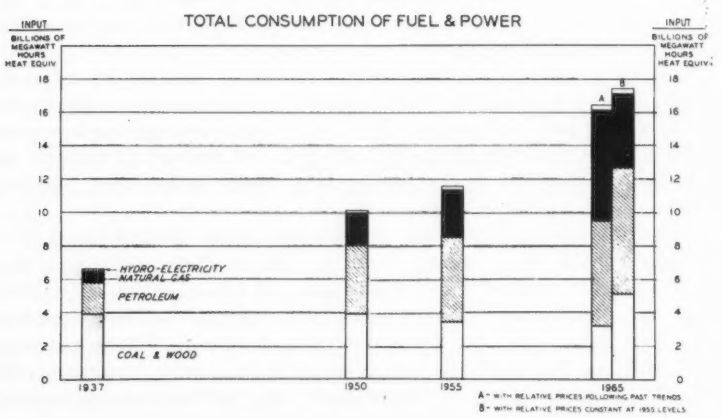

Figure 6

are given. Each estimate assumes no *major* changes in the technology of fuel use, but otherwise the two are based on almost extremely opposed assumptions concerning relative prices. Bar A indicates the probable fuel mix *if relative prices of the different sources of energy continue to diverge as they have in the past.* Bar B shows what the mix might be *if relative prices remain constant.* Bar B is a little taller than Bar A, because its fuel mix would be less efficient. The actual quantities involved compare as shown in Table III.

Table III

INDICATED DEMANDS FOR FUEL AND POWER IN 1965

	Assumption A Changing Relative Prices	Assumption B Constant Relative Prices
Coal	415 mil. tons	650 mil. tons
Fuel wood	---	30 mil. cords
Petroleum	11.3 mil. b/d	12.8 mil. b/d
Natural gas	20.7 tril. cu. ft.	14.2 tril. cu. ft.
Hydroelectricity	190 bil. kwh	180 bil. kwh
(Total Electricity)	(1300 bil. kwh)	(825 bil. kwh)

These two sets of figures give us what I think is the probable range of our requirements in 1965. This range could be narrowed down somewhat by careful study of the geography of energy utilization in the United States. The U. S. is not a single market: It is a host of small markets with dissimilar demands—dissimilar chiefly because of differences in their location with respect to resources.

The range might also be narrowed down by studies of the structure of energy costs, with particular attention to past relationships between wages, interest rates, capital investment and taxes.

There are limits beyond which even such studies could not go, however, for our energy demands in 1965 will depend to some extent on developments which have not yet occurred and cannot now be anticipated, such as discoveries of major oil or gas fields, revolutionary developments in techniques of production, transportation or utilization, and national or state legislation affecting availabilities or prices.

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THE FUTURE OF SYNTHETIC LIQUID AND GASEOUS FUELS†

HOWARD R. BATCHELDER and HARLAN W. NELSON*

Battelle Memorial Institute

INTEREST in the field of synthetic fuels has varied in intensity since the latter part of World War II. Immediately after the war, it seemed that the rapid development of a synthetic fuels industry would be necessary to permit the continued expansion of petroleum usage, and extensive exploratory work was started.

However, most oil companies undertook huge expansions of their refining facilities and intensified their exploration and drilling efforts. As a result, production of oil and proven reserves increased and reached the point where, with increased imports, our supply was more than equal to the demand. Under the circumstances, the production of synthetic liquid fuels would be attractive only if it could economically displace petroleum. None of the cost estimates showed that this was the case, and interest in synthetics dropped off.

Natural gas, at the end of the war, was abundant enough in some localities to encourage its use as a raw material for the synthesis of liquid fuels. As new pipelines were built, and as restrictions on the use of gas were lifted and new markets were opened, the demand for natural gas rose rapidly; within a few

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years the question of satisfying an increasing future demand began to assume major proportions.

As with oil, thoughts turned to production of synthetic pipeline gas by conversion of coal. The technical problems were considered to be surmountable but, again, none of the estimates of cost of production indicated that a synthesis process would be economically feasible.

In October 1955, the present authors gave a paper before ASME Fuels Division examining the factors that would determine the production of synthetic fuels. Changes in many of these during the last two years have made it seem worthwhile to review the figures, bring them up to date, and see how the over-all picture is affected. We did not, nor do we propose now to make new estimates of the cost of production of synthetic fuels, nor to forecast the time when such fuels would be "economically competitive."

The major factors controlling the need for synthetic fuels are the rate of growth of energy demand and of population, the supply and availability of natural fuels, and the logistics of the probable future situation.

SURVEY AND FORECAST OF ENERGY SUPPLY AND DEMAND

An increasing supply of energy accompanying improved technologies has enabled the people of this country to reach a standard of living which is higher than that of any nation in the world and to look forward confidently to further elevations of that standard.

For future expansion of the economy, and for national security, the supply of energy must keep pace with the demand. The report of the President's Materials Policy Commission has considered the supply and demand factors of our future use of energy as a part of a detailed study of the present and future resources of this country. Others also have reported on the future trends of one or more of the mineral fuels, in relation to the demands for energy of the future.

Factors Involved in the Future Demand for Energy

Two factors of direct bearing on the future economy are the growth of the gross national product, and the growth in population. The gross national product is expected to double during the period from 1950 to 1975.

The problem of estimating future population of this country is

illustrated by a plot (Figure 1) of a series of estimates of the 1975 population as a function of the year in which the estimate was made. This is striking evidence of the rapidity of the change of the trend of population in the last twenty years.

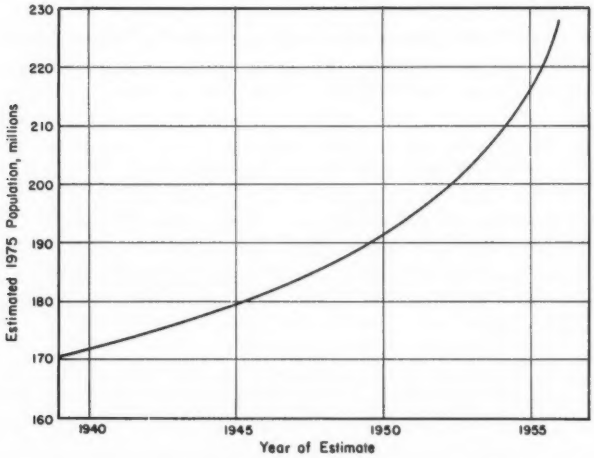

Figure 1. Estimates of 1975 Population as a Function of Year in Which Estimate Was Made

Figure 2 shows the population since 1934 and the present projection to 1975, which is expected to reach 228 million people. This increase in estimate has a large bearing on any estimate of future energy demands, and obviously requires a corresponding increase in the estimate of the energy requirements if our standard of economy is to be maintained.

The per capita energy consumption reached a low of about 150 million Btu per year during the depression, rose quite rapidly to about 230 million in 1945, and in 1956 was somewhat over 250 million. Over the period 1920 to 1956, the average rate of increase was about 1.2 million Btu per year. This increase extrapolated to 1975 would indicate an annual energy consumption at that time of almost 280 million Btu per capita. Two years ago, this estimate was 272 million.

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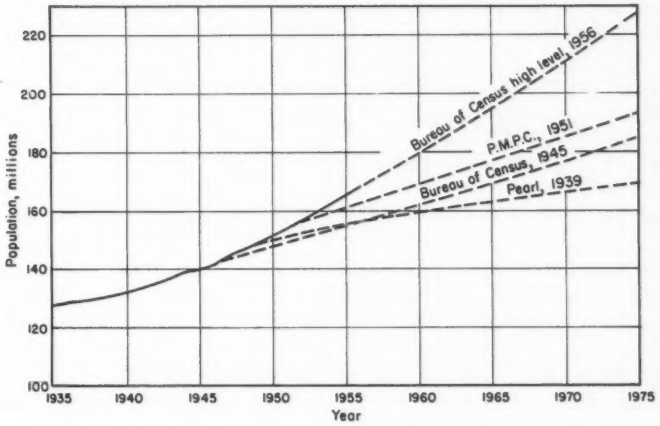

Figure 2. Population of The United States, 1935-1956, and Forecast to 1975

Energy Supply From Mineral Fuels

Figure 3 shows the trend in the annual supply of energy from mineral fuels and water power for this country over the period from 1920 to 1956.

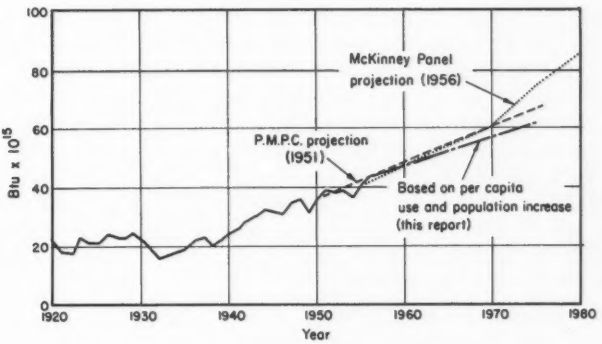

Figure 3. Total Annual Supply of Energy from Mineral Fuels and Water Power in The United States, 1920-1956, with Projection of Demand to 1975 (and 1980)

The projection of the total energy demand curve, as shown on the graph, was made by estimating the per capita usage for 1975 as explained above. Then, with an estimated population of 228 million by 1975, the figure of 63,000 trillion Btu was found to represent the projected total energy demand, an increase of 50 per cent over the supply in 1956. Our forecast in 1955 was for a demand of 57,000 trillion Btu in 1975.

Energy Supply From Atomic Energy And Solar Energy

It has been estimated that by 1970, one-fourth of new power plant construction will be atomic. W. Kenneth Davis, Director of Reactor Development for the Atomic Energy Commission, in a talk before the 17th American Power Congress in April 1955, gave his estimate of the probable rate of this growth. This was two million kw of capability by 1960, five million by 1965, 27 million by 1970, and 83 million by 1975.

However, the graph of the total energy extrapolation showed a demand in 1975 of 63,000 trillion Btu per year. The 83 million kw of capability predicted for atomic power, if generating continuously, would amount to 2,500 trillion Btu per year, or four per cent of the total. Actual production would probably amount to 1,400 trillion Btu per year, or 2.2 per cent of the total. Our 1952 production of water power amounted to 1,600 trillion Btu per year. On this basis, it will be seen that, even with a generous forecast of development of atomic power, it cannot noticeably alter the over-all energy picture within the next quarter century.

The application of solar energy has frequently been spoken of as our ultimate resource. This may well be the case. However, our total energy demands are now at such a very high level that development of any new source of energy must proceed a long way before its contribution to the total is of real significance. It does not seem reasonable, therefore, that solar energy use, even though it grows at a very rapid rate, can rise to major proportions in the next 20 years. Even though the goals for nuclear energy and the possibility of use of solar energy have both increased in the last two years, it is not felt that this conclusion is modified in any way.

SURVEY OF SUPPLY AND DEMAND FOR LIQUID AND GASEOUS FUELS TO 1975

Liquid Fuels

Figure 4 is a plot showing the course of the domestic demand and production of petroleum from 1935 to 1956, from Bureau of

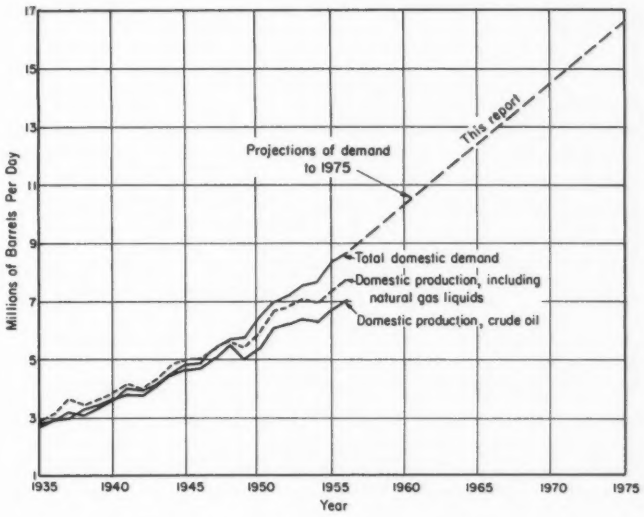

Figure 4. Domestic Petroleum Demand and Production, 1935-1956, and Projections to 1975

Mines data, together with projections of the curves to 1975. Through World War II, the domestic production, natural gas liquids included, was above the curve of domestic demand. Since that time, however, production has lagged behind demand, and imports have made up the deficit.

The projection of the demand curve shown in Figure 4 was made assuming that the average rate of rise of the demand per capita over the period of 1920 to 1956 would continue to 1975, multiplying the extrapolated figure by an estimated population of the country for 1975. Since 1920, the annual demand for petroleum products has grown from 4.28 barrels per capita to 19.1 barrels per capita in 1956. It is estimated that this will increase to 27.0 barrels per capita in 1975. With the estimated population of 228 million shown in Figure 1, a total demand of 16.9 million barrels per day is projected for the year 1975.

Figure 5 shows the plot of the projected demand curve to 1975, together with a projected curve for petroleum production. The intermediate dotted line represents the total production of the petroleum products, including natural-gas liquids. For the next

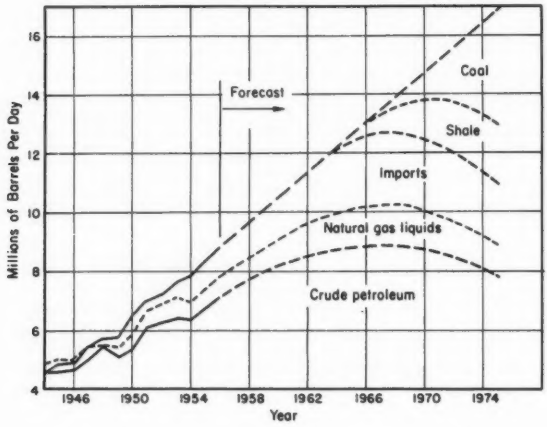

Figure 5. Projected Domestic Demand and Production for Petroleum Products to 1975

five years or so, increased imports will be required to maintain the level of demand shown in the plot. These are shown as reaching a peak value of perhaps 2.3 million barrels per day, holding this for a while, and thereafter declining.

This is our own estimate—or guess, if you prefer. Considering the present world situation and the crisis last year at the Suez Canal, it does not seem reasonable that national security would permit too heavy a reliance on imported oil. Further, when the increasing world demand for oil and the tankers necessary for unlimited imports are taken into account, there is further support for belief in some upper limit of imports. This may not be the figure we have chosen, but it probably will not be sufficiently high to affect the situation appreciably.

Before the time of maximum imports, the production of oil from shale should be ready to take up some of the load of the demand deficit. Union Oil Company recently announced a major effort in the pioneering production of shale oil. This is a significant step forward and, if successful, will be a strong encouragement for production of enough oil from shale to lead us through the transition to oil from coal. Shortly thereafter, it would seem mandatory to begin the production of synthetic liquid fuels from coal, by whatever method has been shown most efficient and economical by research and development work in the intervening

years. Certainly, by any basis of consideration, it would appear necessary to be prepared to have synthetic-fuel-from-coal plants sometime before 1970, when a large deficit is evident. Even if the ultimate reserves of petroleum in this country are found to be increased substantially, the years of peak production would be shifted to the right only moderately, and the height of the peak production curve would be increased by a small amount dictated by conservational practices of production. The need for substantial amounts of synthetic liquid fuels would be then delayed for a few years.

Natural Gas

A "demand" curve cannot be plotted for natural gas, as for other fossil fuels, since production and use can reach only the volume indicated by the capacity of the distribution system.

Figure 6 is a plot of the marketed production of natural gas during the interval from 1920 to 1956, together with the estimates of the possible production and use to 1975. The dashed line extending to 1975 represents a projection of the production curve made on the basis of the rate of growth of per capita use over the period from 1920 to 1956 and the population estimate for 1975. On this basis, the projected marketed production in 1975 would reach a figure of about 20.3 trillion cubic feet. This projection is

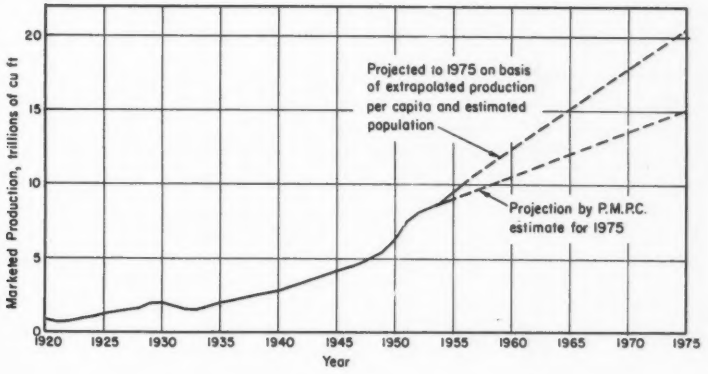

Figure 6. Actual Marketed Production of Natural Gas, 1920-1956, Projected to 1975

subject to many conflicting factors with respect to gathering, transportation, and pricing, and to federal and state regulatory procedures.

Some appreciation of the possible role to be played by natural gas in the energy system of future years can be had by examining a plot of cumulative production of natural gas and proven reserves. Figure 7 shows a graph of the cumulative volumes of marketed production and proven reserves for the period of 1920 to 1956, and projections of these curves to 1975. The curves show that by 1956 a total volume of about 140 trillion cubic feet had been marketed and consumed, and that proven reserves as of that date totaled 235 trillion cubic feet.

Two years ago, we accepted the estimate of Terry that, as of 1950, about 500 trillion cubic feet of gas were ultimately recover-

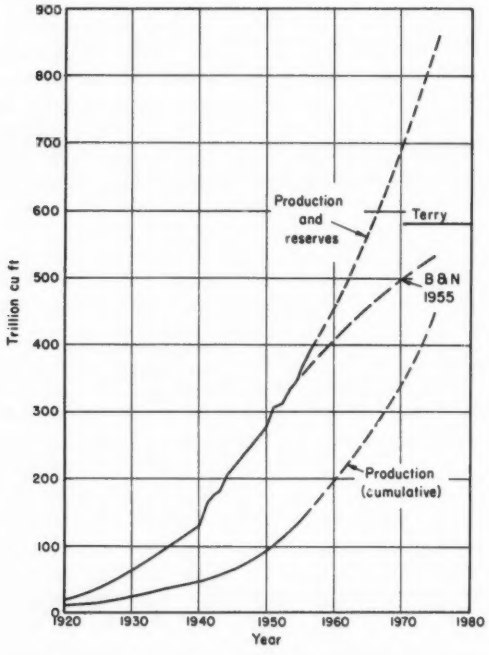

Figure 7. Cumulative Production and Proven Reserves of Natural Gas, 1920-1956, Projected to 1975

able. On this basis, it seemed sound to project the cumulative consumption curve to this figure as an asymptote, which led to an estimate for ultimate reserves in 1975 of about ten times 1975 consumption.

Recently, however, the Bureau of Mines has estimated the ultimate reserves of gas in the United States at 1,000 trillion cubic feet. If this estimate is proven to be valid, it makes a startling difference in the natural gas picture since two years ago. Figure 7 is a plot of cumulative production and proven reserves through 1956. Projections as to future consumption are made as explained above. The projection of proven reserves are made on the basis of maintaining twenty times annual consumption through the intervening years. From this, it will be seen that, in 1975, proven reserves would need to be about 400 trillion cubic feet, and that there should be still some 150 trillion cubic feet recoverable but undiscovered or unproven in 1975. For comparison, the projected reserve curve of two years ago is shown.

If the Bureau of Mines estimate is correct, there will exist enough gas, *in toto,* to meet our 1975 needs. Whether it will be found in accessible locations, in fields large enough to support pipelines, and at a cost below that of synthetic pipeline gas is pure conjecture.

There may be no necessity for synthetic gas until near the end of the century, or there may be circumstances that will encourage, at least in some areas, production of synthetic gas at a much earlier date, or force the curtailment of natural gas use.

CONCLUSIONS

In the past two years, little has occurred to change the prospects for the need for synthetic liquid fuels sometime within the next 10 to 15 years. The natural gas picture has changed appreciably, however, and it is almost impossible to predict the situation of 1975.

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AGRICULTURE: A GROWTH INDUSTRY

CHARLES W. RUSSELL*

Marsteller, Rickard, Gebhardt and Reed, Inc.

IN order to fully describe the growth and marketing importance of the agricultural industry—I will break the problem into three parts. First, I want to show that agriculture is a true industry, just like the steel or auto industries; next I want to illustrate the past growth and future marketing potential of the agricultural industry; and then I want to introduce the two different types of buying motivations that you must know to sell this industry.

Now, I'd like you to meet a friend of mine who will help tell this story. He is Fred Farmer. A lot of people think it takes a special brand of psychology to understand Fred. But he's just like we are—he puts on his trousers one leg at a time—he thinks, acts, and buys for the same reasons we do. When you saw him last, possibly Fred had red hair...a big nose...a beard...or maybe he smoked a pipe. But our Fred is the same guy you know. Fred (and his 4,760,000 farm neighbors) is the guy that very few manufacturers understand...and very few marketing men properly evaluate. Part of the misunderstanding is probably because Fred's business is different from most industries. It is important to know that agricultural "factories" are small and widely scattered, and that agricultural "production lines" are living, growing things.

Now, although Fred's business is different, agriculture is an industry...and had its growing pains. Seventeen years ago 6,096,799 farms cultivated 1,060,852,374 acres. By 1955 irrigation and land development programs had increased the total acreage of 9.2 per cent, but the number of farms had decreased 2.6 per cent. Concurrently, farm population decreased 27.1 per cent.

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World War II and the increasing consumer population complicated the problem further. Fred had to produce more to meet the increased demand. So, between 1940-54 cattle numbers increased 40 per cent. Milk production was up about 12 per cent. Wheat production jumped over 32 per cent. Soybean production almost tripled.

Fred's tremendous advances were due to two basic factors, new farming technology, and automation. Agricultural colleges and industry told Fred about new farming techniques. Industry provided Fred with agricultural chemicals that kill weeds and pests, and stimulate crop growth; fertilizer that puts new life in tired soil; hormones and drugs that increase efficiency of livestock production. And, as they served Fred and his neighbors, manufacturers doubled and tripled in size—business was *fine* and should be even better in the next 20 years.

Growth that depended on automation was just as exciting. Back in 1940 only about one-third of all farms were electrified. Today electricity is a constant source of "labor" on nearly all farms. Fred uses it to pump water, warm young pigs, paint, feed cattle, milk cows, literally thousands of jobs.

Improved livestock feeds have played their share in the growth of agriculture. Annual sales jumped 428 per cent since 1939.

Milking machines with a "gentle touch" may have helped dairy cows increase production. At the very least, they save valuable farm labor, a factor that influenced farms to own over 300 per cent more milking machines in 1954 than they had 15 years before.

A team of horses used to be Fred's trademark. Today a horse is luxury. They have been replaced by over four and a half million tractors. That's 200 per cent more tractors than we had in 1940.

As agriculture boosted its productivity, it was necessary to move more products to market faster. Again mechanization was the answer. Farmers owned 2.7 million trucks in 1954. An increase of 158 per cent in 15 years.

Efficient production methods are, of course, the key to profits in every farm "factory." So, as production increased and labor supply decreased, more farm jobs were mechanized.

In 1940 only 110 thousand corn pickers were in use to harvest the 2,580,985,000 bushel corn crop. You can be certain that there were a lot of tired backs from the hand shucking that had to be done then. By 1954 farmers owned (687,691) 525.2 per cent more mechanical corn pickers. And, due to advanced technology, each one was capable of far more work than the old 1940 models.

The late Louis Bromfield immortalized the "threshing ring."

As late as 1940 it was a common practice for Fred and his neighbors to work as a unit threshing oats and wheat. It was a big social occasion. But it was slow and inefficient. Combines were the answer. In 1940 the Census of Agriculture reported only 190 thousand combines on farms—and then a five- or six-foot, tractor-drawn combine was big. In 1954, 979,666 combines were reported—an increase of 415.6 per cent. And many of these machines are 10- or 12-foot, self-propelled giants.

Cold farm winters precipitated Fred to spend $5.87 on anti-freeze in 1955. A total farm purchase of over 10-1/2 million gallons of anti-freeze.

Fred is like any other industrial plant manager. He has to grease the wheels of progress. Fred and his four million plus neighbors spent over one and three-quarter billion dollars on petroleum products in 1955.

So, the modern agricultural industry has grown through automation and improved technology, just like the steel or auto industries.

By the way, the agricultural industry is considerably larger than the steel or auto industry. And the average farm "factories" are in better cash position than many factories in other industries. The U.S.D.A. Balance Sheet of Agriculture reports that in 1956 farm assets totalled $170 billion. Cash assets added up to $1.4 billion more than total liabilities, as shown in Table I.

In addition, Fred and the other four million plus farm families in the country offer an excellent market for regular consumer products. Domestic help is hard to find in rural communities and

Table I

Financial Assets:	
Deposits and Currency	$11.3 billion
U. S. Savings Bonds	5.6 "
Investments in Cooperatives	3.3 "
Total Cash Assets	$20.2 billion
Liabilities:	
Real Estate Debt	$ 9.0 billion
Non-Real Estate Debt	4.4 "
Loans held by Commodity Credit	1.9 "
Other	3.5 "
Total Liabilities	$18.8 billion

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the farm wife needs time from housework to help in the production work. It's very common for the wife to keep the record books, drive to town for parts, drive trucks, tractors, help feed livestock, etc. The farm home needs labor saving equipment too.

Again, electricity is the answer. The average home contains a maze of electrical appliances—toasters, irons, washers, food mixers and sweepers. Many have electric dishwashers. The U.S.D.A. reports that there were 1,542,000 food freezers in 1954 (a 137 per cent increase in only four years). In addition, many farms rented "lockers" at co-op freezer plants. These renters are all prospects for food freezers. And they have done away with the old "butchering day" that used to take place every spring.

Fred still eats real "harvest hand" meals and, contrary to popular opinion, he buys nearly all his staples. In 1955 farm food purchases totalled almost four billion dollars.

Statistics indicate that farming is just as hard on the nerves as marketing. In 1955 Fred spent $52.03 on tobacco. New tranquilizing drugs may be replacing corn whisky—at least Fred spent $44.29 on drugs in 1955. Also, he (and neighbors) purchased over two billion dollars worth of clothes...over $400 million of insurance in 1955.

So, the agricultural market is double-barrelled. It is a growth industry and the growth is predicted to accelerate—both as a market for those products needed in the business of farming and for those products used in day-to-day living.

As a buyer for these two different types of products (industrial—consumer), Fred Farmer could be classified as schizophrenic. Normally, he is activated by two different sets of buying motivations. When he is buying products that are connected with the business of farming, he acts like any industrial purchasing agent. He is usually: unemotional, rational, factual, and cost-conscious.

He buys products for his business with an eye for business profits. But, as a buyer of consumer products, he thinks like you or the family next door. He is usually emotional, impulsive, irrational, and habitual. So Fred wears two hats. He buys like any purchasing agent when his purchases are concerned with the business of farming. And, as a consumer, he buys just like any other consumer statistic.

In the last 15 years farm output per man-hour has increased 95.6 per cent. This growth is due basically to new technology and automation. By 1975 output per farm worker must increase another 100 to 125 per cent to keep up with increasing demand. The

same kind of man will be doing the work, so accelerated "mechanization" is the only way this increased productivity can be accomplished. Economists predict that this increased productivity will require 150 to 175 per cent more machinery on farms by 1975.

If your company manufactures products for the business of farming or for the farm home, make certain that the agricultural industry is in your marketing and selling plans. Research the market carefully. Study the distribution channels. Learn the techniques of selling to farm people. Study the motivations that make farmers buy. Tailor your sales force to get maximum effective manpower on the firing-line. Appeal to the farmer's key buying motives, and—get your share of the *32 billion dollar farm market.*

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DISCUSSION OF "AGRICULTURE: A GROWTH INDUSTRY"

VERNON W. RUTTAN*

Purdue University

MR. Russell's paper presented me with the familiar reviewer's dilemma: Should the reviewer spend his allotted time tearing apart the previous speaker's paper? Or should the reviewer ignore the main presentation and present his own views on the assigned topic.

Actually I am going to pursue neither of these alternatives. I would not want you to assume, however, that this reflects any lack of effort on my part. For I have attempted both.

My attempt to develop a critical paper failed because Mr. Russell really did not present very much for me to disagree with. I would like to record two specific points of disagreement however:

First of all, new technology (including automation) has not accounted for all of the increase in farm output during the last 15-20 years. When the contribution of technological change is measured by the change on the total input-output ratio, it becomes apparent that increased inputs and new technology (including automation) have made approximately equal contributions to increased farm output during the period since just before World War II.[1]

Second, I know of no empirical evidence, and Mr. Russell does not cite any, which indicates that as a purchaser of farm supplies, the farmer is *unemotional, rational, factual* and *cost-conscious* in contrast to his *emotional, impulsive, irrational, and habitual*

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1. See Vernon W. Ruttan, "The Contribution of Technological Change to Farm Output: 1950-1975," *The Review of Economics and Statistics*, XXXVIII (Feb., 1956), pp. 61-69. Also, "Our Long Run Farm Potential," *Economic and Marketing Information for Indiana Farmers*, June 22, 1956, pp. 304.

behavior as a purchaser of consumer goods. My impression is that the relatively small amount of empirical research in this field provides no basis for assuming a sharp divergence of farmers' behavior as purchasers of consumer and producer goods.[2] Disagreement on this question probably reflects a need for additional research on the problem of farmer buying patterns.

An attempt to develop my own paper on "Agriculture:- A Growth Industry" was also unsuccessful. For no matter how hard I tried, I was unable to convince myself that agriculture is a growth industry within the context of the commonly accepted use of the term—that is an industry in which either expanding demand, rapid introduction of new technology, or new product development results in higher than average returns to capital investment.[3]

Certainly agriculture is not a growth in the above sense. And by almost any measure we might want to apply, agriculture has declined relative to other major sectors in our economy during the past two decades. The data which Mr. Russell uses to illustrate growth can be more correctly interpreted as illustrating change—the type of change characteristic of an industry which has not been able to maintain its position in an expanding economy.

The fact that agriculture is not a growth industry does not mean that agriculture will not present an expanding market for certain of the agricultural supply industries as production becomes increasingly concentrated in larger farm units. Agriculture is already using roughly $15 thousand of capital equipment per worker. My projections, which I regard as somewhat optimistic, indicate increases in capital inputs of between 50 and 100 per cent between 1950 and 1975, rather than the 150-175 per cent envisaged by Mr.

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2. See J. I. Gifford, Selling and Purchasing Decisions of Farmers. (Thesis submitted to the faculty of Purdue University in partial fulfillment of the requirements for the Degree of Master of Science, June 1956). This research is also reported in, R. L. Kohls and John Gifford, "Farmers Choice of Hog Markets," *Journal of Farm Economics*, XXXIX (February, 1957), pp. 67-74, and R. L. Kohls, R. L. Stucky and J. I. Gifford, "Farmers Selection of Farm Machinery Dealers," *Journal of Marketing*, April 1957, pp. 446-450. For a more general discussion of this problem, see George M. Beal and Joe M. Bohlen, *How Farm People Accept New Ideas*, Iowa State College Agricultural Extension Service, Special Report No. 15, November, 1955.

3. See, for example, the discussion of growth stock, growth firms and growth industries in Robert W. Anderson, "Unrealized Potentials in Growth Stocks," *Harvard Business Review*, Vol 33, (March-April 1955), pp. 51-67. According to Anderson, a growth industry ". . . should be a basic element of the country's standard of living, and it should have existing products or services which have met with such increasing public acceptance that unit demand is rising at an average rate significantly greater than the average rate for the economy as a whole." (p. 61).

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Russell. Purchases of current inputs—fertilizer, insecticides, processed feed, antibiotics, fuel, and machinery repairs and other current operating expense items can, in the future, be expected to expand at perhaps double the rate expected for intermediate and longer terms capital items.

Neither would I argue that farmers, in their role as consumers, will not present a much different market for consumer goods than in the past. As the number of farms continues to decline, a slowly expanding total net farm income will be distributed among fewer and fewer farm families. And with higher incomes per farm family we are likely to see normal consumption patterns approach even more closely the consumption patterns of middle income urban families.

Recognition of the changing nature of the agricultural market brings us up face to face with Mr. Russell's final stricture: "Get your share of the 32 Billion Dollar Farm Market." Getting your share of the farm market during the next two decades will almost certainly require more skill and more ability than it has in the past.

Within the interrelated system of farm supply, farm production, and farm marketing industries recently identified as "Agribusiness" a number of important structural changes are underway. Many of these changes can be classified under the heading of "integration." In many respects this is a very different kind of "integration" than we have been used to in other sectors of the economy, for it has generally involved a centralization of buying and selling decisions without central ownership of farm production facilities.

Let me mention three examples:

Perhaps the most dramatic example of integration has occurred in broiler production. In order to assure a rapid acceptance of new technology in feed formulation and to capture a larger share of gains resulting from rapid acceptance and use of this new technology, the feed industry has acted, in many cases, as the active agent which has brought about integration of the processing, growing, financing, and supply functions in the broiler industry. There are indications that the same type of organizational revolution may be in store for turkey, egg, and even hog production. Getting or building your share of the market in an integrated broiler industry characterized by a high degree of centralized buying and selling will certainly require different sales organization and techniques that have been used in the past.[4]

4. For an excellent discussion of integration in the poultry industry, see Earl F. Crouse, "The Challenge of Integration—Where is the Poultry Industry Headed," *Cooperative Digest*, March 1957.

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A second pattern of integration is illustrated by the rapid growth of the farm management firm during the last decade. The farm management firm provides centralized managerial services, including production, buying and selling service to a "chain" of tenant or even owner-operated farms. With a larger share of farm purchasing concentrated in the hands of "purchasing agents" rather than "family farmers," farm supply firms will find increasing pressure to develop lower cost distribution methods. In the fertilizer industry, old patterns of dealer relationships are already breaking down and larger quantities of fertilizer are purchased directly from the manufacturer. Here again, "getting your share of the market" will require considerably more skill than in the past.

A third pattern of integration is offered by the modern farm cooperative. With the cooperative the farmer is taking on the role of "integrator" by establishing an organization to perform buying and selling functions which are not economically performed by the farmer himself. Cooperatives are now distributing products manufactured by almost every segment of the farm supply industry. And in recent years, cooperatives have increased their bargaining power relative to the manufacturer of farm supplies by extending their operations to include manufacturing as well as distribution. "Getting your share" of a market in which cooperatives play an important role, will also become increasingly difficult.

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AGRICULTURE: INDUSTRY'S CHIEF RESOURCE AND PARTNER

RAY A. GOLDBERG*

Harvard University

SETTING

THE title of this workshop is "The 32 Billion Dollar Challenge." IN REALITY IT IS A 150 BILLION DOLLAR CHALLENGE.

In agriculture, the farm problem is not just a farmer's problem. The eight million farm operators and workers in our nation buy over 16 billion dollars worth of farm machinery, feed, fertilizer, seed and pesticides from supply firms that employ over six million people. With these supplies, the farmer begins to apply his productive abilities and facilities to produce his 30 billion dollars worth of food and fiber products. In turn, these 30 billion dollars worth of farm products are assembled, processed, and distributed by ten million other people to the ultimate food and textile consumers who pay over 100 billion dollars a year for these items. The sum total of all of this amounts to over 40 per cent of all consumer purchases in the United States and makes use of 37 per cent of our nation's total labor force.

This 150 billion dollar agricultural composite has been termed "agribusiness!"[1] It is within this agribusiness setting that I will discuss the roles of those of us engaged in the marketing of these

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Ray A. Goldberg received his AB and MBA degrees from Harvard University and a PhD degree in Agricultural Economics from the University of Minnesota. He had worked for Cargill Inc., Minneapolis, and was Manager of Hampden Elevator Co. in St. Paul from 1953-55. In addition to his work as Assistant Professor of Business Administration at the Harvard Business School, Mr. Goldberg is an officer and director of three companies and a partner in the Mapleton Grain Company, Mapleton, N.D.

1. Agribusiness is defined as the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them. A *Concept of Agribusiness*, J. H. Davis and R. A. Goldberg, Harvard Business School, April 1957, page 2.

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100 billion dollars worth of food and textile products that have their origin on the farm.

AGRICULTURE IS INDUSTRY'S CHIEF PARTNER

Agriculture is industry's chief partner. This is apparent when we realize that 30 billion dollars of farm output is the foundation for the sales of 100 billion dollars worth of food and textile products to ultimate consumers. Just as modern agriculture could not exist without purchasing manufactured inputs of 16 billion dollars, neither could food and textile processors, distributors, and various marketing agencies exist without farm production. Farmers now purchase over half of their inputs. They must rely on the technology of others in order to operate their segment of agribusiness in a profitable and efficient manner. At the same time, changes in consumers' desires and demands, along with changes in the technology of processing and marketing these food and textile items, have put pressure on farmers to improve the type of products they produce. These farm changes, in turn, require new types of processing, marketing, promotion, transportation, and other functions that take place before food and textile goods are ready for purchase by consumers. This, in essence, is the partnership between business and agriculture. One of the key ingredients in this relationship is the growth and development of new and efficient marketing channels—but even more important is the development of marketing men who have the breadth of vision to see these interrelationships and act on the basis of this knowledge.

These two-way partnership relations bring agriculture and business geographically and financially closer together. More direct shipments take place from the farmer to the processor and to the assembler. Commercial feed manufacturers finance the feed, the chicks, and even the facilities in order for these farmers, in turn, to operate broiler "factories." These broiler "factories," in turn, have encouraged further decentralization of processing. In addition, processing firms have been able to ship more directly to the large supermarkets and chains rather than to handle the warehousing and storage of these products themselves. These are but a few of the examples of the close partnership that exists within agribusiness and between agribusiness and the rest of the economy.

Another example of this two-way partnership is the bakery goods industry. For every $1 spent for bakery goods at the wholesale level another $1.30 of activity takes place throughout the economy. A network of interrelationships is involved in

producing, selling, and finally consuming a loaf of bread. A consumer in Boston buying a loaf of bread, affects the wheat farmer in North Dakota, the fertilizer manufacturer in Tennessee, and the farm machinery manufacturer in Illinois, just as he affects the flour maker in Minneapolis and the bake shop in Boston.

Another example of this two-way partnership between agriculture and business is the Meat Economy. From Figure 1 one is able to ascertain the flow of direct purchases and sales of Meat animals and products through meat packing and poultry processing to the ultimate consumers of meat and poultry products. All of these figures are in millions of dollars and are in producers' values. The variety and numbers of industries and the large sums involved—about eight billion dollars at the farm level and 11 billion dollars at the wholesale level—are but small indications of the interrelationships involved.

One can see in Figure 2 both the direct and indirect requirements for producing one million dollars of meat goods in 1947. This figure indicates the interrelationships of the agricultural and business partners. In this example, for every dollar spent on meats at the wholesale level, $1.80 of activity is generated in other parts of the economy.

This circular relationship in our meat economy example is shown in Figure 3. In this figure the principal components of the meat economy (the farm supplier, the producer, the assembler, slaughterer, distributor, and consumer) are shown in the form of a circle. This circular flow diagram emphasizes that each component is dependent upon all the other components, and the flow of goods and services among these components is directly influenced by the actions of the individuals engaged in marketing.

From these examples, it is obvious that cooperation among the divisions of agribusiness is essential for the success of programs in marketing, research, or policy formulation. Just as the production and sales division of a company cannot work at cross purposes without affecting the profitability and growth of that company, neither can the separate divisions of the agribusiness economy afford to work at cross purposes. Each action by one division of the economy automatically affects the other divisions of the economy.

This new partnership of agriculture and business resulted from a scientific revolution that has separated and specialized various functions that were once centered on the farm. Before the technological revolution took place, farmers grew their own power, made their own tools, and processed and marketed much of their own food and textile products. This scientific revolution

FLOW OF THE DIRECT PURCHASES AND SALES OF MEAT ANIMALS AND PRODUCTS THROUGH MEAT PACKING AND POULTRY PROCESSING TO THE ULTIMATE CONSUMERS OF MEAT AND POULTRY PRODUCTS, 1947

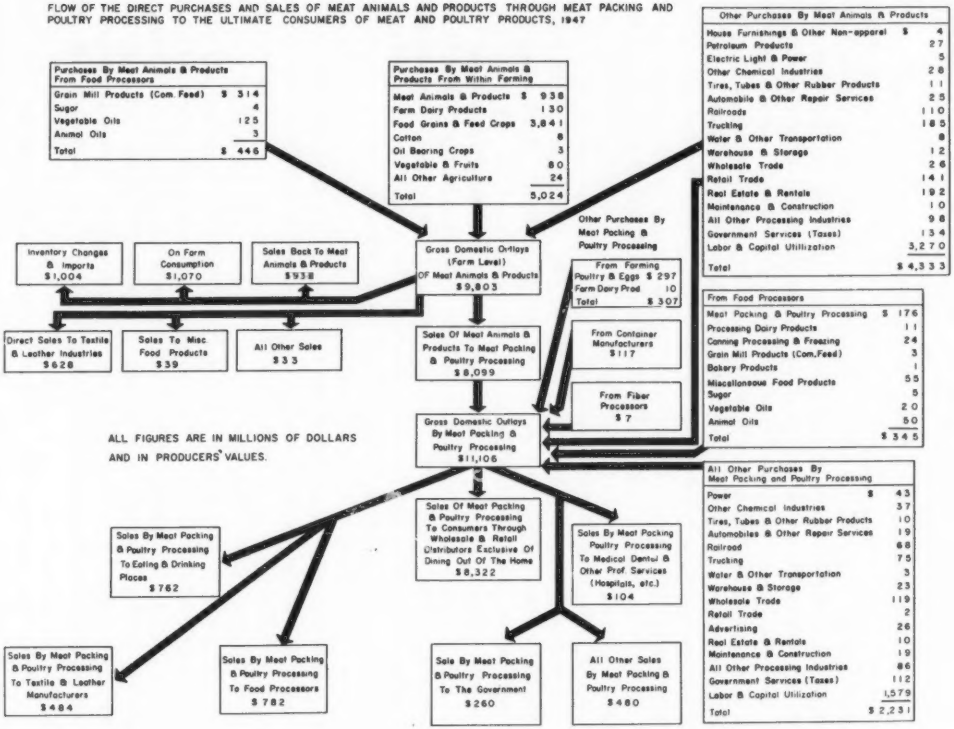
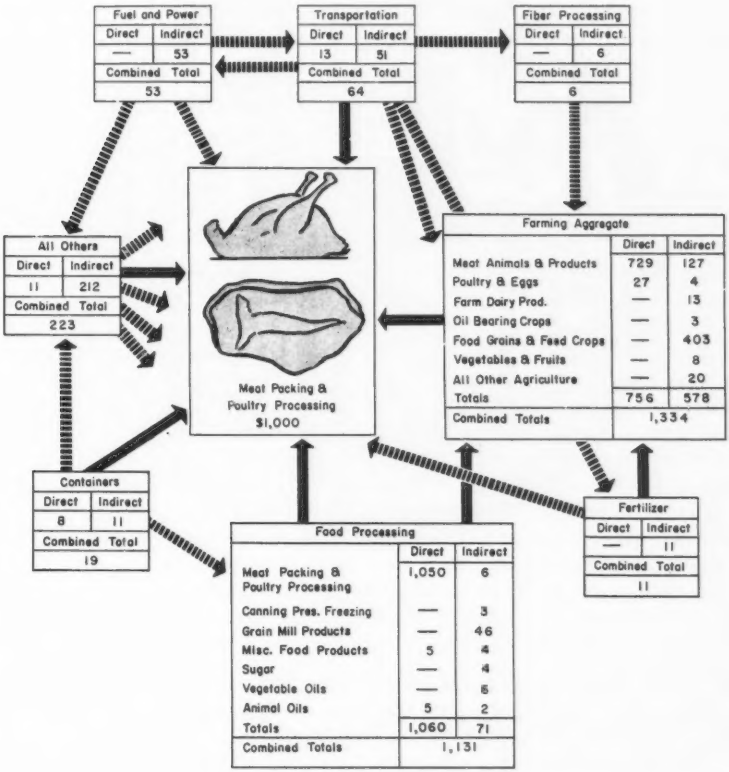

Purchases By Meat Animals & Products From Food Processors
Grain Mill Products (Com. Feed) $ 314
Sugar 4
Vegetable Oils 125
Animal Oils 3
Total $ 446
Purchases By Meat Animals & Products From Within Farming
Meat Animals & Products $ 938
Farm Dairy Products 130
Food Grains & Feed Crops 3,841
Cotton 8
Oil Bearing Crops 3
Vegetable & Fruits 80
All Other Agriculture 24
Total 5,024
Other Purchases By Meat Animals & Products
House Furnishings & Other Non-apparel $ 4
Petroleum Products 27
Electric Light & Power 5
Other Chemical Industries 28
Tires, Tubes & Other Rubber Products 11
Automobile & Other Repair Services 25
Railroads 110
Trucking 185
Water & Other Transportation 8
Warehouse & Storage 12
Wholesale Trade 26
Retail Trade 141
Real Estate & Rentals 192
Maintenance & Construction 10
All Other Processing Industries 98
Government Services (Taxes) 134
Labor & Capital Utilization 3,270
Total $ 4,333
Inventory Changes & Imports $1,004
On Farm Consumption $1,070
Sales Back To Meat Animals & Products $938
Gross Domestic Outlays (Farm Level) Of Meat Animals & Products $9,803
Other Purchases By Meat Packing & Poultry Processing
From Farming
Poultry & Eggs $ 297
Farm Dairy Prod 10
Total $ 307
From Food Processors
Meat Packing & Poultry Processing $ 176
Processing Dairy Products 11
Canning Processing & Freezing 24
Grain Mill Products (Com. Feed) 3
Bakery Products 1
Miscellaneous Food Products 55
Sugar 5
Vegetable Oils 20
Animal Oils 50
Total $ 345
Direct Sales To Textile & Leather Industries $628
Sales To Misc. Food Products $39
All Other Sales $33
Sales Of Meat Animals & Products To Meat Packing & Poultry Processing $8,099
From Container Manufacturers $117
From Fiber Processors $7
Gross Domestic Outlays By Meat Packing & Poultry Processing $11,106
ALL FIGURES ARE IN MILLIONS OF DOLLARS AND IN PRODUCERS' VALUES.
All Other Purchases By Meat Packing and Poultry Processing
Power $ 43
Other Chemical Industries 37
Tires, Tubes & Other Rubber Products 10
Automobiles & Other Repair Services 19
Railroad 68
Trucking 75
Water & Other Transportation 3
Warehouse & Storage 23
Wholesale Trade 119
Retail Trade 2
Advertising 26
Real Estate & Rentals 10
Maintenance & Construction 19
All Other Processing Industries 86
Government Services (Taxes) 112
Labor & Capital Utilization 1,579
Total $ 2,231
Sales Of Meat Packing & Poultry Processing To Consumers Through Wholesale & Retail Distributors Exclusive Of Dining Out Of The Home $8,322
Sales By Meat Packing & Poultry Processing To Eating & Drinking Places $762
Sales By Meat Packing & Poultry Processing To Medical Dental & Other Prof. Services (Hospitals, etc.) $104
Sales By Meat Packing & Poultry Processing To Textile & Leather Manufacturers $484
Sales By Meat Packing & Poultry Processing To Food Processors $782
Sale By Meat Packing & Poultry Processing To The Government $260
All Other Sales By Meat Packing & Poultry Processing $480

Figure 1

DIRECT AND INDIRECT REQUIREMENTS FOR PRODUCING $1,000,000 OF MEAT GOODS, 1947



ALL FIGURES IN THOUSANDS OF DOLLARS AND IN PRODUCERS' VALUES.
BLANKS SHOW VALUES OF LESS THAN $1,000

Figure 2

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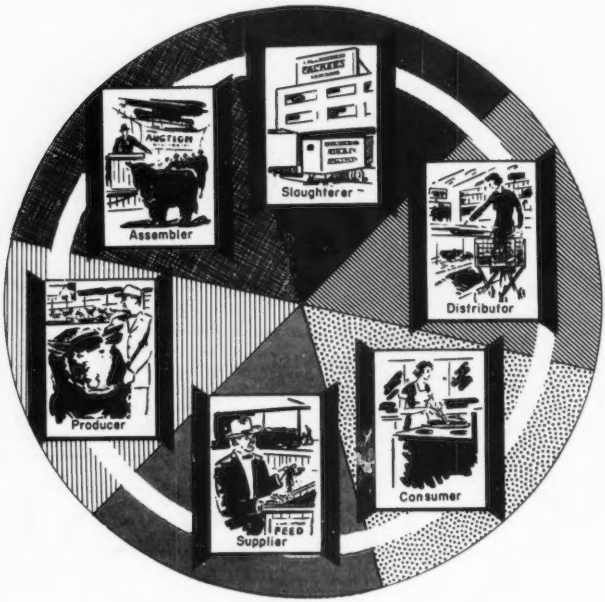

Figure 3

is taking place in several interrelated phases. It is comprised of mechanical, chemical, and biological changes and the tempo of these developments is an increasing one.

These technological changes represent the new partnership of agriculture and business and again emphasize agriculture's role as industry's chief partner. What are the resources that support this partnership?

AGRICULTURE IS INDUSTRY'S CHIEF RESOURCE

Agriculture is industry's chief resource. When we think of resources, we think in terms of natural resources like coal, oil, other fuels, minerals, and metals. We also think in terms of human, financial, and power resources. In what way, then, is agriculture industry's chief resource?

In terms of assets, farmers have 176 billion dollars invested

in farms as of January 1, 1957. This is the largest single industry in the United States. In addition, when this 176 billion dollars of assets is added to the 15 billion dollars invested by farm suppliers and the 45 billion dollars invested by food and fiber processors and distributors, we have a total of 236 billion dollars worth of assets. These combined assets in agribusiness are over twice the dollar value of all the other manufacturing industries in the United States. In other words, the 176 billion dollars of assets in agriculture is a major source of capital for the other segments of agribusiness and for the national economy. This is true, because of the very nature of agriculture.

For example, let us look at the meat economy. In Figure 2 you notice that for every million dollars of meat consumed at the wholesale level another $1,800,000 activity takes place in other parts of our economy. To support this total of $2,800,000 of activity, many billions of dollars are invested by various sectors of the meat economy. As has been stated before, farmers have a total asset investment of 176 billion dollars. This includes the farmers who grow the meat animals and the farmers that produce the food grains and feed crops that feed the meat animals. Part of this 176 billion dollars worth of assets is invested in inventory and part in plant. On January 1, 1957, farmers maintained 11.2 billion dollars worth of livestock on their farms. The significant point is that livestock and poultry producers as well as other farmers have huge capital investments in relationship to their annual sales. The total assets of the 10 leading meat packing companies in 1956 were only 1.5 billion dollars and the total sales of these 10 meat packing companies in 1956 were only approximately seven billion dollars.

Other comparisons can be made by expressing these relationships in another term, namely, the capital coefficient. The capital coefficient is defined as the dollar value of the products of a capital supplying sector required to produce one dollar of productive capacity. In 1947, according to a Harvard Economic Research Project study, farming required $1.61 of capital for every dollar of output; on the other hand, meat packing required 12 cents, leather only 14 cents, and apparel 12 cents of capital for every dollar of output. These data help explain the extent to which agriculture is a chief capital resource to the partners in agribusiness and to the other sectors of the economy.

In terms of production, agriculture is the initiator of a large percentage of total consumer expenditures. The 100 billion dollars of consumer purchases of food and textile products represented 40 per cent of all consumer expenditures in the national economy

in 1955. This is significant not only insofar as the percentage of expenditures is high but also because these are expenditures for items that are necessities. Food and clothing are not fads. Even if we now exist on "milltowns" or other tranquilizers, resources are always necessary to satisfy our food and clothing needs.

In terms of people, agriculture as a part of agribusiness is a chief resource to industry and the total economy. As stated above, 37 per cent of the total U. S. labor force was employed in agribusiness in 1955. Eight million people are employed on farms, six million people are employed in industries that supply farms with commercial goods, and ten million people are employed in processing and assembling food and textile products. For every person employed on the farm, two are employed off the farm. Also, the birth rate has been higher in rural areas than in urban areas. This has meant that our labor force needs have been supplied by the surpluses of human resources that are produced on farms.

The decrease in the number of farmers and farms is not an indication of a dying sector of the economy; on the contrary, fewer farmers and larger farms indicate the growth of technology on the farm, the saving of manpower, and the increase of productivity. Similarly one cannot assume that our food distribution system is also a dying industry because we had 387 thousand grocery stores in 1939 and only 297 thousand stores in 1954.

Agriculture in terms of being a market for new production goods is also a resource for industry. The 16 billion dollars worth of commercial goods purchased by farmers in their operations has provided a basic market for industry. In summary, agriculture, then, as defined in agribusiness terms, is the chief resource of industry in terms of capital, in terms of labor, and in terms of a growing market.

SIGNIFICANCE

What does the change from agriculture to agribusiness signify? Even though we recognize that agriculture is a chief resource and partner of industry in this dynamic revolutionary economy, what does it mean to those of us in marketing and in research?

Marketing

To those of us in marketing, it means that we require different personalities in our marketing organizations. We require our personnel to be more than order-takers and more than salesmen.

We need individuals who are broad in their experience and broad in their training. We need men and women who can coordinate the activities of specialists. We need men who can make a market analysis of a situation for the future, not men who analyze just the needs of today. We need men who can foresee the revolutionary changes that are taking place on the farm, and that can be in the forefront in supplying the inputs to the farm and of handling the outputs of the farm in a new and more efficient manner.

In terms of marketing, we must recognize that the middleman is located on the farm as well as in the other segments of the agribusiness economy. The shortening of the marketing channel, and the lessening of service supplied that has occurred in the "discount house" type development in the hard goods industry, is now occurring in the soft goods industry. It is occurring in the form of more direct sales to the farmer and more direct purchases from him. We are by-passing terminal locations that no longer satisfy the new marketing pattern. We are locating our manufacturing plants closer to the agriculture production areas. We have created new middlemen, middlemen who recognize these market and production changes and have been able to adapt their old operations or create new operations to handle the new food and textile products in a more efficient manner. For example, brokers and jobbers are needed to handle frozen meats. Before, the meat specialists were in charge of meat products, now the frozen food specialist must also be part of the meat distribution system. No longer can we rely on the old methods of marketing and distribution.

No longer can we look at our particular business operation and isolate it from the interrelated sectors of the economy that affect our particular industry. In our meat economy example, each of the six components (the supplier, producer, assembler, processor, distributor, and consumer) is looking at only its particular component. We need to recognize the circular nature of our economy. What economic and moral responsibilities do we have as marketing men to help provide a balanced agribusiness economy that is progressive, stable and profitable? As our production and marketing units become larger in size and fewer in number, how should we use our increased power? In terms of private policy making, what do the hundreds of decisions made by us every day do to change the shape of the circular agribusiness economy? Do we leave broad policy decisions to those who make public policy?

Research

What does agribusiness mean to the researcher? It means a coordinated effort in tackling research projects. Although various problems may be initiated by one group interest in the agribusiness economy, it will affect, in varying degrees, all the other groups in this economy.

Private research workers should take a broad approach when undertaking various research assignments. They should cooperate not only with those in their immediate industry, but also with researchers involved in closely related industries. One, of course, cannot ignore the help and cooperation that are necessary from various government agencies.

Government research workers must also take an even broader view of their research activities than they have in the past. Even though they have had facts and figures from commodity groups at their finger tips, they still separate farm and off-farm activities from one another. The rivalries between the Department of Commerce, the Department of Labor, and the Department of Agriculture are just as evident as the rivalries between the various components of the private sectors of the economy. This means that closer cooperation must take place at the government level as well as at the private level.

This is indeed a challenging situation for those of us engaged in the fields of private, educational, and governmental marketing research activities. We can be accused by various groups of being guilty of too much cooperation and coordination. By this I mean that groups may attack this type of operation as being contrary to our antitrust laws and that we may be setting the pattern for cartels in the economy. Or other people may attack this proposition at the other extreme and say that we are advocating planning on a national basis with complete governmental control. Neither of these misinterpretations is true. We believe that healthy competition can only thrive in an informed and visionary economic and social setting.

The concept I have given you is not a panacea for all the agricultural and agribusiness problems facing the economy, nor is it a new research tool. Rather this concept is a frame of reference, a way of looking at specific marketing research problems. It means that there are horizontal and vertical relationships that cannot be ignored when understanding any particular problem in this complex agribusiness economy. It means that to obtain the best results from our marketing operations we cannot ignore the partnership between agriculture and business that supplies 40 per cent of all

the goods purchased by consumers annually. Nor can we ignore the importance of the resources that support this partnership. We do depend on agriculture because of the very nature of the biological production process. We must attempt to foster cooperation in research and policy formulation among all the components of the agribusiness economy. As marketing men, we are in an excellent position to be leaders in these efforts—for the growth of the agribusiness economy and for the development of our specific interests in the economy.

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DISCUSSION OF "AGRICULTURE: INDUSTRY'S CHIEF RESOURCE AND PARTNER"

HERMAN M. SOUTHWORTH*

The Pennsylvania State University

DR. Goldberg has presented to us a documentation of the structure of economic interrelationships and interdependence within what he calls "Agribusiness"—i.e., the complex made up of farm production, the industries supplying it with production goods, and the industries using its output as raw materials for further processing, marketing, and distribution. The data are well chosen to illustrate the point convincingly. But they are only a sample of the much more detailed and comprehensive documentation presented in his and Dr. Davis' book, *A Concept of Agribusiness,* recently off the press.

The book, like his present paper, is a work of scholarly pioneering in a new area. It develops and documents an insight regarding agriculture's economic interrelationships in a manner that has not been done before. Having to improvise both for method and for data, the authors have nevertheless brought out a rounded and convincing picture. They present in a newly delineated perspective one of the major problem areas of our economy today. The boldness with which this has been done is stimulating.

But the book—and the paper presented by Dr. Goldberg—are also provocative in that they draw a moral from their analysis. They set forth a challenge—a challenge of particular force for marketing men.

Dr. Goldberg's work is not doctrinaire. He has no pet panaceas

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for the farm problem. His challenge is, simply, that those who sell to farmers and those who process and distribute farm products both have an interest in taking an integrated view of the "Agribusiness" process of which they are a part, and a responsibility to apply their ingenuity and imagination towards improving its total operation.

Let us take a brief further look at the nature of this farm problem. It has many facets, and each individual or group usually emphasizes one or another of these at the expense of the remainder. To some it is the problem of low incomes of farmers and their current and recurrent failure to share equitably in the general prosperity. To some it is the survival of the family farm as a valuable, nearly unique institution in American society. To some it is the maintenance of national prosperity, which they judge to be imperiled by the chronic maladjustment in this important sector. To some it is a problem of safeguarding our future through conservation of the resources, both natural and human, upon which our multitudinous posterity must depend for those essentials of life—food and clothing. To some it is the economic injustice of inelastic demand, under which the more farmers produce the less they receive in return. To some it is a matter of getting government out of business—more specifically out of what they regard as a deep and futile business involvement that is exorbitant to the taxpayer. These and other facets, with their commutations and permutations, alarm one group and another.

Analysis from a marketing standpoint sheds light on the problem. In my own view, agriculture is caught in a technological squeeze in our progressive economy. Its productive efficiency—and its productive potential—have increased rapidly, and continue to do so. Its products, basic and vital as they are, nevertheless face a market of limited expansibility under normal, peacetime conditions—unless additional profitable uses can be found for them and they can be promoted much more successfully than in the past.

The structure of agricultural production is such that it finds this sort of problem peculiarly difficult to deal with. Dr. Goldberg cited the high ratio of invested capital to sales. This capital is quite specialized. We have not found many remunerative large-volume uses for land other than to grow things. Plows, tillage equipment, and harvesters have few alternative uses. Dairy barns have little value except for housing cows and handling milk. And even when the owners or operators of farm enterprises go out of business, the capital resources usually continue to produce in other hands—often with increased, rather than curtailed, output.

An industry of millions of independent producers has great difficulty managing a concerted program to gear supplies to current demand, or vice versa. That is why agriculture has so commonly -- not only in the United States but elsewhere -- turned to government to help deal with its marketing problems. Some of the resulting programs may have proved unrealistic, but they have been in response to a real need.

This is the problem in marketing terms, as I see it, at any rate. It is my version of the challenge that Dr. Goldberg has laid before you. Farm-producer and marketing groups are showing increasing awareness of the need for concerted effort to deal with this problem.

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